THE ECONOMICS OF INSTALMENT SELLING

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A Study in Consumers' Credit

WITH SPECIAL REFERENCE TO THE AUTOMOBILE

By

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IN TWO VOLUMES
VOLUME TWO
APPENDICES

THE ECONOMICS OF INSTALMENT SELLING

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APPENDIX ONE

INSTALMENT SELLING IN REAL ESTATE

INSTALMENT SELLING IN REAL ESTATE

THE modern development of instalment selling in real estate in the United States began with the building and loan associations.[1] The first building and loan association was organized in a suburb of Philadelphia in 1831. In its earliest form it was nothing more than an association of prospective owners, each member of the association paying a fixed amount monthly into a general fund, with the expectation that the accumulated sums would suffice to build a home from time to time, first for one and then for another of the members. When the homes were completed, the association was dissolved. In the next stage the system of participation by shares was introduced, so as to enable any individual who so desired to invest more or less than his fellow members.

After another interval a new system was inaugurated by the creation of so-called depositing members. Individuals who did not care to build homes for themselves, but who simply desired to invest money in a profitable enterprise, were given an opportunity to buy shares and to receive profits in the shape of dividends. The profits were derived partly from the interest on the capital invested, and partly from the premiums and fines which attended the progress of the movement. Premiums were paid by those who were so eager to have their houses finished that they were willing to pay more than the current rate of interest. Fines were imposed upon those who failed to meet the dues at the stipulated times. The development of this system of fines and premiums

[1] Cf. H. G. Moulton, *The Financial Organization of Society*, Chicago, 1921, pp. 714 *et seq.*; and the large amount of literature issued by the League of Building and Loan Associations in Cincinnati.

engendered abuses which of recent years have been gradually eliminated. It may also be mentioned that the depositing member was given the privilege of withdrawing his participation at any time—a privilege not enjoyed by the regular participating member.

The next stage in the development was the conversion of a mere temporary club into a permanent association. This was rendered possible by the adoption of the so-called serial plan. To the original club composed of a few members, it now became possible to add from year to year new groups, each of the new groups forming an independent series of members whose interests naturally terminated as soon as their houses were constructed. As each old group went out, its place was taken by the addition of a fresh group so that the association as a whole continued indefinitely.

The last stage in the development was due to the so-called Dayton plan, which was first tried in Dayton, Ohio, in 1870. Under this plan it was not necessary for a new member, before joining a group, to await the termination or passing out of a preceding group. On the contrary, he had the option of buying a membership certificate or share at any time or in any amount. Moreover, an individual member could pay off his indebtedness as rapidly as he desired and could thus retire from the association.

These various types of organizations are still found under the general name of building and loan associations. The loans made by the associations are either stock loans or real-estate loans. The stock loans are secured by the shares of the individual in the association, and are generally restricted to about 85 per cent of the book value. The real-estate loans are advanced to members on the security of mortgages on the property, the valuation being usually made by a special appraisal committee. In the early days the funds as they accumulated

were kept intact and not disturbed until the ultimate dissolution of the group, the general fund being responsible in the interval for any possible losses. Later on, however, after the introduction of the system of depositing members, the plan of periodical distribution of profits in the shape of dividends was introduced. At the present time, dividends are paid annually or semiannually, as in the case of most corporations.

The growth of the building and loan associations was phenomenal. Passing over the earlier period, we may state that in the year 1914 the associations numbered 6,616 with a membership of 3,103,935, and total assets of $1,357,707,900. By the end of 1925 the number had almost doubled, having increased to 12,403; the membership had about tripled, standing at 9,886,997; and the assets had more than quadrupled, amounting to $5,509,176,154.[1] This impressive figure of over five and a half billion dollars must be credited very largely to the system of instalment payments.

More recent forms of instalment selling in real estate are found in connection with the financing of buildings in our cities, and with the development of suburban properties. In the first class, special attention must be called to the construction and sale of co-operative apartments in our large cities. Indeed, a whole new science has arisen in this department of real estate financing, and the literature of it has become an enormous one.[2]

[1] The detailed figures from year to year are found in the *Proceedings of the 34th Annual Meeting of the United States League of Local Building and Loan Associations*, Cincinnati, 1926.

[2] The most abundant literature is found in the publications of the National Association of Real Estate Boards in Chicago. Beginning a few years ago with modest single volumes, the Board has since published whole series under the name of *Annals of Real Estate Practice.* These represent the proceedings and reports of the numerous divisions of the Association, and often contain valuable illustrative material, as well as discussions of principles involved. For each of the years 1925 and 1926 no less than nine volumes have been published. Several of these volumes deal especially with finance. Cf. also *Real Estate Securities. A report presented by Clarkson Potter, Chairman of the Real Estate Securities Committee of the Investment Bankers Association of America at the Fifteenth Annual Convention, Oct. 14, 1926, at Quebec.* Chicago, 1926.

The older practice of the building and loan associations was that of the construction of buildings by the owner of the plot, whose own investment of capital sufficed to defray a large part of the outlay, the balance being raised by a first mortgage payable at the expiration of a short time. The newer methods are quite different. In the first place, the owner of the property, instead of being a single individual, is often a syndicate composed of several persons, while the cash investment is comparatively small, the remainder of the capital needed being provided by the issue of first-mortgage and of second-mortgage bonds. Moreover, the subdivision of the interests has become considerable, and has been rendered possible by the issue of all manner of fractional securities, such as stock participations, land-trust certificates, lease-holding bonds and the like, thus making it feasible for even the man of modest means to purchase an interest in the venture.[1]

It is in order to facilitate the distribution of such securities that the instalment system has been introduced. The purchasers of these securities are now as a rule asked for only a very small down payment in cash, the remainder of the cost being distributed over a more or less considerable period of time. In a special study dealing with this subject, one expert has assumed as a typical transaction a "sales schedule" based upon 10 per cent down payment in cash, the balance on contract at 15 per cent down with interest at 1½ per cent a month with no payments for interest or taxes

[1] Among the reports and essays on this topic, reference may be made to the following contained in the 1926 volumes of the *Annals of Real Estate Practice:* John N. Stalker, "Financing Subdivisions by Bond Issues," Vol. III, *Home Building and Subdividing*, p. 102; Robert F. Bingham, "Developments in the Use of Land and Lease-holding Trust Certificates," Vol. IV, *Real Estate Finance*, p. 78; Elmore R. Andrews, "Stock Issues as a Means of Financing Real Estate Developments," *ibid.*, p. 99; Robert J. Nash, Jr., "How Building and Loan Associations Can Solve the Second Mortgage Problem," *ibid.*, p. 146.

for one year, but with payments thereafter semi-annually to the extent of 20, 40, and 30 per cent of the balance.[1]

The instalment method applies not only to the land itself but also to the sale of the securities based on the land. In a syndicate contract chart elaborated by one writer detailed mention is made of the amount of initial payments held in trust, followed by the application of instalment collections.[2] Another writer discusses the principles underlying the periodical or instalment payments by the investor. We are told that prudence requires that these payments be kept within the reasonable capacity of the individual to pay in order to avoid default and discouragement. In some cases it seems necessary to extend the amortization period on the loan. Sometimes use is made of the so-called split loan on concurrent mortgages. Other plans are the so-called Dayton plan, etc.[3] A third writer describes the method of meeting the instalments under the so-called budget plan of monthly amortization as applied to co-operative apartments.[4]

In short, without going into the details of a subject to which a whole volume might easily be devoted, it will suffice to state that the amount of instalment selling, both of real estate itself and of securities resting on real estate, aggregates sums which, even conservatively estimated, run into the thousands of millions of dollars. Although we have, unfortunately, no trustworthy statistics, it may be affirmed without fear of criticism that of all modern forms of instalment selling, real-estate instalment credit is by far the most important and the most complicated.

[1] Charles P. Gray, "Capital Requirements for Purchasing, Developing, and Marketing a Subdivision," *op. cit.*, Vol. III, p. 70.

[2] Rupert C. Hertzog, "Charting the Financial Plan in Subdivision Prospects," *ibid.*, p. 117.

[3] Frank R. Chase, "Modernized Building and Loan Finance," *ibid.*, p. 148.

[4] H. G. Montgomery, "Financing Individual Purchases of Apartments," *ibid.*, Vol. VIII, *Cooperative Apartments*, p. 69.

APPENDIX TWO

THE VOLUME OF RETAIL SALES

THE VOLUME OF RETAIL SALES

On the subject of the volume of retail sales, only two scientific investigations that are at all worthy of the name have thus far appeared. One is a study of 1923, by Lawrence B. Mann.[1]

Mr. Mann based his investigations on the returns of the Census of Manufactures of 1919, and the Census of Occupations in 1920. He presents the following figures as to the important classes of commodities that ultimately entered retail trade in the year 1919.

TABLE I

A COMPUTATION OF THE VOLUME OF RETAIL SALES BASED ON CENSUS FIGURES

Commodities	Values
Articles manufactured in the U. S.	$25,573,000,000
Fresh vegetables and fruits	978,000,000
Milk and butter sold from farms	824,000,000
Eggs and chickens sold from farms	785,000,000
Fish marketed	25,000,000
Coal sold at retail yards	686,000,000
Imports of manufactures, etc.	1,062,000,000
Total	$29,933,000,000
Exports of manufactures, etc.	3,025,000,000
Balance, or cost of articles entering trade	$26,908,000,000

The next question is as to how much ought to be added to these figures for mark-up. The most approved opinion seems to consider 10 per cent as the average mark-up of wholesalers and 25 per cent as the average

[1] "The Importance of Retail Trade in the United States," *American Economic Review,* Vol. 13 (1923), p. 609.

mark-up of retailers. Adding these percentages, Mann reached the conclusion that the total value of the retail trade in 1919 was 36,998 millions of dollars.

For subsequent years Mann utilized the statistics of retailers who reported to Federal Reserve Banks. These retailers in the aggregate did an annual business of over two billion dollars. An estimate for these subsequent years based on this rather large sample is shown by the following figures of retail trade:

1919	$35,500,000,000
1920	41,600,000,000
1921	36,500,000,000
1922	36,400,000,000

A later computation which has never appeared in print, but which was kindly put at our disposal by Mr. Mann, represents a slightly different method of approach but results in somewhat analogous conclusions. It starts with the production of raw materials, includes the value added by manufacture, adds the imports, subtracts the exports, and gives a resulting balance of values marketed through domestic channels. Of this balance 50 per cent is estimated to go to the ultimate consumer, 15 per cent is added for wholesale mark-up, and 25 per cent added for retail mark-up. The figures are found in the table on the next page.

Another and even more interesting method of approach to the problem is found in the investigations of my colleague, Professor Nystrom, of the School of Business of Columbia University.[1]

Nystrom employs no less than four separate methods for his estimates, checking each one by the others. The first method is essentially the same as that followed by Mann. But Nystrom's estimate is somewhat less conservative, resulting for the year 1919 in over thirty-eight

[1] "An Estimate of the Retail Volume in the United States," *Harvard Business Review*, Vol. 3 (1924–25), p. 150.

TABLE II

A SECOND COMPUTATION OF THE VOLUME OF RETAIL SALES RECKONED IN MILLIONS OF DOLLARS

Items	1909	1914	1919	1921	1923
Raw material:					
1. Agricultural products					
(a). Crops (minus amount fed to live stock)	6,462	8,165	17,684	10,216	12,348
(b). Live stock . . .	3,071	3,783	8,364	5,468	6,233
2. Minerals. . .	1,887	1,118	4,595	4,139	5,999
3. Forest products	718	762	1,360	1,189	1,666
Value added by manufacture. .	8,529	9,878	25,042	18,322	25,856
Imports .	1,476	1,789	3,904	2,509	3,792
Total.	22,143	26,492	60,949	41,643	55,894
Exports	1,701	2,071	7,750	4,379	4,091
Balance (marketed through domestic channels)	20,442	24,424	53,199	37,464	51,803
50 per cent estimated to go to ultimate consumer through the jobber-retailer channel. .	10,221	12,212	26,600	18,732	25,902
Add 15 per cent mark-up at wholesale	11,754	14,044	30,590	21,542	29,787
Add 25 per cent mark-up at retail. .	14,693	17,555	38,238	26,928	37,234

million dollars instead of thirty-five and a half millions. The difference between the two depends upon the answer to the question as to how much in each case is distributed to the retail trade, and how much is utilized as raw material for further manufacturing purposes. If allowance is made for the latter factor, it is probable that Nystrom's figures are slightly more accurate than those of Mann, both being derived in the same way, and both disregarding the amount left from the preceding year or carried over to the subsequent year.

The second method employed by Nystrom was to take the average sales per person engaged in the retail business in certain selected lines and in certain specified localities, and then to attempt a generalization from

these estimates. Assuming that the average sales per person in a retail store amount to $10,000, and taking from the published reports the number of persons so employed as 3,345,000, this would result in a total retail business of thirty-three and a half billions in 1919, which is virtually the same figure as that obtained by the first method. The only state in which we have definite figures in regard to these points is Pennsylvania, owing to the peculiar, but, for our purposes, fortunate method of taxation there employed. Without going into the details, it may be stated that if we apply the Pennsylvania figures to the whole country, it will give a total value of retail sales of about thirty billions. The taxation law, however, is not rigorously enforced in Pennsylvania, and the statistics are not complete; and there is reason to believe that Pennsylvania is somewhat below the average of many other states in the volume of its retail sales. This is due in part to the rather low standard of life in the coal mining industry, as well as to other causes. Making allowance for these factors, Nystrom conjectures that the actual figure for the entire country would be nearer thirty-five billions than thirty billions.

The third method of computation employed by Nystrom was to take the budget of the average American family and to multiply the result by the number of families. In the bulletins of the United States Bureau of Labor Statistics, the cost of living in the year 1918–1919 was reported for no less than 12,096 wage-earning families taken from ninety-two widely separated localities. The total average expenditure was found to be $1,434.94 out of an annual average income of $1,593.29. Advantage was taken of a report issued by the Chamber of Commerce of the United States on the purchasing power of the people, which fortunately included about thirty-one of the ninety-two localities studied above.

Taking the average *per capita* expenditures in working-class families, and multiplying the results by the total number of working-class people, would give as the volume of purchases $21,947,638,923. This figure, however, would not include the expenditures of farmers, members of the professional classes, and persons in several other categories. If we add these purchasers and estimate $2,000 as the average family budget of these classes, it would give a grand total of thirty-five billions, an estimate which compares very well with those previously mentioned.

Finally, a last method was to start with the social income of the United States, taking the estimates for 1919 made by the Bureau of Economic Research. These estimates represent a total income of sixty-six billions. Nystrom estimated that the income for 1923, which had not been published at the time, would be about seventy billions. He then proceeded to deduct from this national income all items which do not pass through the retail business. Among these were savings, including the amounts devoted to the purchase of investments, to insurance premiums, and the like, which were estimated in a fairly reliable way by David Friday at twelve billions. Further, there are to be deducted taxes. The taxes amounted to about seven and a half billions; but, under the conditions prevailing, it was estimated that about one-third of this sum was added to the prices of commodities subject to taxation, and would, therefore, have to be counted in the retail price. Five billions were therefore deducted for taxes. The next deduction was for rents. We know that about thirteen out of every twenty-four families in the United States pay rent, and if we assume an average monthly rental of twenty-five dollars, or a yearly rental of three hundred dollars, the deduction would amount to three and nine-tenths billions. Next are to be considered the goods produced

and consumed at home which aggregate a large figure in the United States, and may be estimated at 10 per cent of the whole, or seven billion dollars. Finally, there must be deducted the payments for the services of lawyers, doctors, domestic servants, and the like. Without giving the details of all these items, it may be said that the total for the year 1923 so deducted amounts to thirty-five billions, leaving as the volume of retail sales the remaining thirty-five billions—an estimate which is fairly comparable to those obtained in other ways.

It may also be remarked that analogous studies which have been made abroad, and especially by Julius Hirsch in Germany, result in the conclusion that the volume of retail sales in any one year is just about one-half of the entire social income. This would bear out the conclusions of Nystrom.

APPENDIX THREE

THE CONSUMERS' STUDY

Under the Direction of

SOLOMON KUZNETS

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THE CONSUMERS' STUDY

GENERAL INTRODUCTION

1. THE SUBJECT MATTER OF THE STUDY

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Necessity of Modified Definitions for Statistical Purposes. A quantitative study of economic phenomena cannot take as its starting point definitions current in economic theory. This is but one aspect of the difference in methods employed by the theorist and the statistician. The former speaks in terms of purpose or of function, whether he assumes the viewpoint of society or of a self-regarding individual. He classifies actions as if he had complete insight into the motives underlying them or as if he drew up the "social contract" which organized our society in all its present complexity and presumable rationality. The statistician, on the other hand, can distinguish actions only by their form or by their readily recognizable outward attributes. Therefore, concepts, the contents of which economic theory defines in terms of means for the achievement of certain ends, must be redefined in terms of modes or forms of human behavior easily distinguishable from each other and susceptible of quantitative measurement; then only will they serve the statistician as helpful tools in his

work. Of necessity, the result is sometimes more than mere reformulation. Frequently there is no perfect correspondence between form and purpose of action; moreover, the statistician can frequently not draw so hard and fast a line as the theorist.

Definition of Consumption. Applying these considerations to the subject of our study, we may ask: How is consumption to be defined for statistical purposes? How is credit for consumption to be distinguished from credit for production without inquiring into the intentions of the borrower? The answer to the first question is relatively simple. The statistician can make use of the widely accepted identification of production with activities centering ordinarily in a business enterprise, and of consumption with those of the activities involving the spending of money which radiate customarily from a household. This descriptive, rather than analytical, definition helps us to decide whether purchasing a one-family house for one's own use and assuming the mortgage on it involves credit for consumption, or whether purchasing securities on the part-payment plan is a form of consumption credit, and the like. As a matter of fact, these transactions have nothing to do with consumers' credit.

Consumers' Credit as Contrasted with Producers' Credit. Coming now to the second question, let us see what are the easily recognizable forms of consumption credit. It will be more convenient to handle this problem by eliminating first those forms of credit which belong without a shadow of doubt to production credit. These are: credit extensions by commercial banks and the floating of securities by investment houses. Loans by Morris Plan Banks, by credit unions, or on life insurance policies, etc., would lie on the border line, since they are used quite as extensively by petty traders in obtaining capital for their enterprises as by consumers.

Exclusion of Emergency Credit. The subject matter of this study cannot, however, be delimited by the definition given. The scope of this investigation is narrower than the entire field of consumption credit. We are concerned only with that part of it which is on a par with production credit, that is, which presents analogies in regularity of employment and in the economic justification of use. We are thus attempting to exclude from the field of observation pawnbrokers, loan sharks, provident loan societies, and similar agencies engaged in the provision of emergency credit. The consumer who is living within his means turns to the assistance offered by these institutions only on extraordinary occasions. A business man who is as "hard up" as the consumer borrowing from a loan shark will never get any credit from his bank. What has been abolished in one case by the force of circumstances must be consciously excluded by us if we desire to center our attention on the sound part or the normal aspects of consumers' credit.

Limitation of This Inquiry to Time Sales by Retail Dealers. What is it then that will constitute the subject of this inquiry? Surveying all forms of credit and excluding those which are not forms of consumers' credit according to the principles elucidated above, we find that the phenomenon with which we have to deal consists mainly of credit extensions by retail dealers to their customers in the form of charge or deferred-payment sales and of credit extensions by independent agencies financing the consumers' purchases of specified articles. To the second group belong the activities of "customers' peddlers," the financing of furniture purchases by Morris Plan Banks, etc. For them there is no statistical information extant. Moreover, their extent is rather limited and it is more than probable that the share of consumers' credit which they supply is very small. It will suffice

if we confine this investigation to credit extensions by retail dealers.

Further Limitation to the Long-Established Lines of Retail Trade. With regard to credit sales, retail dealers may readily be divided into two classes: (1) those selling new-fangled devices, the wide use of which has been rendered possible by the adoption from the beginning of the instalment scheme of financing the consumer; and (2) those selling articles which for generations have been used in every household, a part of the sales being from time immemorial made on credit. In this study we shall analyze the experience of the second group of dealers only. The reasons for this are many, the two outstanding ones being: first, that the experience of automobile dealers, the chief representative of the first group of retail merchants, has been subjected to a thorough analysis in a separate study[1]; second, that the type of consumers' credit common to the first group of retail establishments is that of instalment almost exclusively, while we should not desire to limit our investigation of consumers' credit to only one form of it.

Selection of Retail Lines to be Surveyed. Our study can not lay claim to be an exhaustive one. We have had to content ourselves with selecting several lines sufficiently representative of the second group of retail marketing to insure the applicability of our conclusions by analogy to all forms of credit extensions by retail dealers. There were also a number of other considerations by which the selection was guided. For one thing, there was a genuine curiosity about the effect of the instalment arrangement upon the sales on charge: to what extent is the former coming to be merely a substitute for the latter?[2] This line of approach would render

[1] The Dealer Study, Appendix 5.

[2] That there is such substitution in department stores is illustrated by the figures quoted from Bulletins 53 and 57 of the Harvard Bureau of Business Research on "Oper-

advisable the selection of those branches in which credit was granted to customers before instalment selling became common and in which instalment practices could appeal to both the seller and the buyer because of the durability and the expensiveness of the articles sold. Again, the investigators could not assume the task of collecting the information for themselves: they were limited to published information or unpublished material accessible to them. For these reasons it was decided to survey the situation in the retailing of clothing, furniture, kitchen hardware and house furnishings, and jewelry. For each of these lines with the exception of the last, a sufficient volume of information was available only for the years 1921 and following— a period which for practical purposes perhaps coincides with the instalment era in retail trade. For the jewelry stores the material is much more extensive and goes back to the year 1897.

2. Evaluation of the Data Utilized in the Study

Credit Treated in One or Two Dimensions
Importance of Both Dimensions in This Study
Reduction of the Two-Dimensional Magnitude to a Single Figure
Impracticability of Securing Reliable Dollar-Month Figures

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ating Expenses in Department Stores." According to these, the typical figures for cash, charge, and instalment sales as a percentage of total sales are.

Sales	1924	1925
Cash and C. O. D.	52%	49%
Charge	48%	46%
Instalment.		5%

It is interesting to observe in this connection that the smaller department stores with net sales of less than one million dollars, which are usually doing a greater relative amount of cash business, have also been selling less on the instalment plan. For the year 1925, only 10 per cent of the stores of this type have ventured into this field at all (as compared with 30 per cent of the larger stores) and the total amount of sales on instalment in them has not exceeded 2 per cent of the aggregate business done.

Importance in This Study of Credit Outstanding as Contrasted with Credit Granted
Accounting Records of Credit Outstanding
Description of the Material Utilized in This Study
Equal Representative Value of the Data for All Establishments
Possible Underestimate of Outstandings in Our Material
Representativeness of Stores for Which Records Are Available with Regard to All the Retail Establishments in the Trade
Term "Store Year"
Dating of the Material by Years

Credit Treated in One or Two Dimensions. The amount of credit, like many other economic quantities, may be treated as a magnitude in two dimensions or in one, according as we do or do not consider the time element involved in credit extensions. The difference between the two is the same as that between "stock" and "flow," to use the terms of modern economists, or between the situation at a certain moment of time and the situation throughout a period of time. The amount of credit in one dimension is simply the quantity of money loaned; the amount of credit in two dimensions is the quantity of money loaned, with account in some way taken of the length of time for which it is loaned.

Importance of Both Dimensions in This Study. What is the amount of credit with which we deal in this inquiry? Are we interested merely in the amount of merchandise sold on credit, or is it important for us to know also the length of time for which the credit, once granted, remains unpaid? Inasmuch as this study is undertaken in connection with an investigation into the economics of instalment selling, we do not hesitate to declare that it is the two-dimensional amount of credit that is germane to our study. We should judge that a large part of the apprehension about instalment selling would vanish into thin air were the instalment maturity of the same length as that of the charge account which instalment selling in many cases supplants. Our information then must consist—let us say tentatively—of two items: the amount of retail sales

made on time and the length of time during which a claim created in connection with a credit sale remains unpaid.

Reduction of the Two-Dimensional Magnitude to a Single Figure. In following the changes in the amount of credit—and by this term we shall hereafter refer only to credit measured in two dimensions—we should, however, meet with grave difficulties if we were not able to express this amount in the form of a single figure. How shall we compare the amount of credit in two successive years when in the first year the quantity granted is small but the maturity long, while the situation in the second year is the reverse? Comparisons are out of the question if we can find no way of reducing the measurements on the two dimensions to one quantity.[1] There is only one widely practised procedure by

[1] That this difficulty is a real obstacle in utilizing the results of many investigations may be illustrated by a case selected at random. From the *Report of the Committee on Business Research of the University of Nebraska on the Control of Retail Credit* (Bulletin No. 6, *Nebraska Studies in Business*), we learn that the percentage of sales on credit and the average age of accounts receivable in some of the Nebraska stores in 1922 was as follows:

Type of Store	Percentage of Sales on Credit	Age of Accounts (in Days)
Furniture	76 3	172 1
Grocery	67 9	36 8
Clothing	50 8	70 0
Department store	45 7	57·4
General merchandise	35·0	85 3

An examination of this table makes it possible to assert that furniture stores come first in extending credit and that clothing stores extend more credit than department stores. What, however, could we conclude about the difference between general stores and department stores, general stores and grocery stores, general stores and clothing stores, etc.? Aside from that, the percentage of sales on credit when given separately from the age-of-accounts figures is likely to mislead the reader into believing that department stores grant more credit than general stores, which is obviously not true.

which the reduction may be accomplished: it is the multiplication of the quantity lent by the number of time units for which it is loaned. The logical difficulties involved here can be avoided if from the very beginning we speak in terms of two dimensions and if the final result is expressed in terms of a two-dimensional unit, say in dollar-months.

Impracticability of Securing Reliable Dollar-Month Figures. The reliability of our dollar-month quantities depends of course upon the accuracy of the measurements on each of the dimensions. For the purposes of this study, which is a detailed analysis of a limited sample rather than an extensive survey of all retail stores granting credit, the measurement on the amount of credit granted dimension must yield not an absolute figure, but a relative, something in the nature of a percentage, an index or a rate. On first thought the percentage of total sales made on time appears to be the most serviceable. It can be readily seen now that, since the range of variation in the number of months (or even of weeks) during which an average account of a retail customer is likely to be outstanding is narrower than that of the conceivable percentage of total sales made on time, the reliability of our composite quantities depends far more upon the accuracy of the figure for the length of time than upon that of the figure for the percentage of sales. The importance of this argument becomes obvious when it is stated that it is precisely the figure for the length of time to secure which one must have access to the books of the retail concerns in order to be at all sure of its accuracy. The off-hand say-so of the retailer about the length of time for which his receivables are outstanding may be an excellent guess or a poor one, but it certainly can not be used as a multiplier for the percentage of total sales, particularly so when comparisons are intended. Access to the books

of some hundreds of retail firms was out of the question for the investigators; the labor involved in computing the turn-over of accounts receivable—where such access could be had—was beyond the limits of practicability. It appeared necessary, therefore, to look for some other way of determining the amount of retail credit.

Importance in This Study of Credit Outstanding as Contrasted with Credit Granted. The method of multiplying the relative amount of credit sales by the length of time is to be rejected also on other than practical grounds. The results obtained with the aid of this method tell us how much credit was granted, while the subject of our inquiry should be the amount of credit outstanding at each moment within the period investigated. In speaking of credit for business purposes, particularly of bank credit, we never think of the amount of credit granted: we reason from the item "loans and discounts" in consolidated balance sheets of banks and have in mind constantly the amount of credit outstanding. To make the study of consumers' credit analogous to that of producers' credit we should here proceed in a similar fashion. Credit granted and credit outstanding are not identical: a statistical series for the former would tell us how many new loans have been made, while one for the latter would show how many claims or obligations are in existence. The former is by its very nature cumulative, so that in speaking of the credit granted in a year we should have to add up credit granted on each day of the year; the latter, being the description of a condition, is not susceptible of cumulation, although it admits of averaging. The two are, however, closely connected because the existence of credit outstanding is the result of the granting of credit.[1] The

[1] For an interesting statistical illustration of the connection between credit granted and credit outstanding, *see* Leland Spencer, *An Economic Study of Rural Store Credit in New York*, Bulletin 430 of the Agricultural Experiment Station, Cornell University pp. 12–13.

amount of credit outstanding may be estimated when the amount granted (the time dimension included) is known. Such an estimate could not, however, be exact due, first, to the necessity of introducing assumptions to the effect that the granting of loans has been spread evenly through the period and that each of the loans has the same maturity as the average known; and second, to the necessity of ignoring the carry-over in credit outstanding from one period to the next.

Accounting Records of Credit Outstanding. Another important feature of credit outstanding is that a quantitative measure of it can be obtained directly and with much greater ease than that for credit granted. The balances on the Accounts Receivable and Notes Receivable accounts represent the total amount of the obligations of customers who have bought merchandise on credit. Were information regarding these balances at the close of each business day available, we should have been provided with an excellent measure, sharing in the precision of all accounting records and presenting in a ready-made form the combined effect of the two factors: the amount of credit granted and the length of maturities. The raw material which we utilized in this study does not consist of daily balances on the accounts and notes receivables; we could not really hope to secure anything of this kind, since such balances are computed by the retailer not more frequently than once a week, and in most of the cases but once a month. Our material however, does not come up to even these standards; this will become clear after a brief characterization of the data which were actually available.

Description of the Material Utilized in This Study. Owing to the courtesy of the American Clothing Manufacturers' Bureau, Inc., the Lyon Furniture Agency, the National Jewelry Board of Trade, and the Massback Hardware Company, we have had access to the files of

these organizations in which financial statements of retail dealers in the respective lines were kept. These organizations are credit-rating agencies[1] which gather information about the concerns in the trade, concentrating most of their attention on the retailers. The purpose of their activity is to advise the manufacturer or jobber, who might consider selling on credit to the retailer, as to the nature of the credit risk which he is assuming. One of the items on the basis of which a credit rating is assigned is the financial statement of the retail dealer; any retailer who ever expects to buy on credit is accustomed readily to accede to a request for such a statement. The statements are in the nature of modified balance sheets with answers to additional questions, among them such as relate to total annual sales. The number of statements from a given concern is not necessarily limited to one, although few businesses have more than one statement for the same year; moreover, the rendering of a single statement does not in itself bring about a regular filing of statements in each of the succeeding years. Statements have not apparently been sent in unless asked for; because of this fact most of the statements in any one year come from concerns for which there were no statements in the preceding or the succeeding year.

Equal Representative Value of the Data for All Establishments. We may now test the material available in the light of the ideal requirements set up above. One of these is that the information should consist of figures for daily balances of receivables, whereas our data provide us with such figures for only one day in the year. How far is the situation on this day representative of the conditions throughout the year? If financial state-

[1] The Massback Hardware Company excepted; the latter is a wholesale hardware concern having extensive connections with retail hardware stores on the Atlantic seaboard.

ments are sent in only once a year—and as a general rule this is the case—the figures are probably taken off the balance sheet which is prepared at the end of the fiscal year. The end of the fiscal year comes at very nearly the same time for all of the establishments in the same line: it is standardized by sound accounting practice. If this is true, then the situation reflected in the statement of dealer XY resembles the typical condition of his concern just as much as the situation reflected in most of the other statements issued by dealers in the same line resembles the typical condition of the respective concerns; that is, the representative value of the statements is the same approximately for all of the firms. This is an important consideration, especially in dealing with trades having marked seasonal fluctuations in sales and hence in receivables. If we have figures for only one day in the year, we know at least that these figures are considered typical by the credit-rating agencies, and, moreover, that their representative value is equal. This feature of the material at hand enables us to utilize it in a study based largely on a comparison of various groups of retail stores in the same trade.

Possible Underestimate of Outstandings in Our Material. The fact that most of the statements depict the condition at the end of the fiscal year has another important consequence as well. According to sound accounting practice the day when the books are closed should come at a time when the business of the concern is more or less at a standstill, between the end of one period of energetic activity and the beginning of another, at the time when the concern has "cleaned up" most of its accounts and notes payable, reduced its merchandise on hand to a minimum, and collected a large part of its receivables. If this practice is followed, then our balance figures for receivables are less than the average

for the year. The degree of underestimation involved in using the balance figure as equal to the average increases with the shortness of the credit maturities customary in the trade and with the more marked character of the seasonal swings in sales.

Representativeness of Stores for Which Records Are Available with Regard to All the Retail Establishments in the Trade. The second point on which the available material falls short of the ideal consists of the fact that the reports in consecutive years are not as a rule received from the same stores. It raises the question of the representativeness of our sample for each of the years. This question is a part of the larger problem of the general representativeness of the material with regard to all of those characteristics of retail establishments which are important in a study like ours. This problem is perhaps the most thorny one in the investigation. Had it been possible for us to obtain reports directly from retail stores, we should have been in a quandary as to the selection of stores which might be considered representative, since there are no statistics extant to tell us how the totality of establishments in the chosen lines of trade are distributed geographically, by size, or by a number of other pertinent characteristics. Now that the material has been collected and is ready for utilization, this ignorance regarding the few most essential features of the trade leaves us at sea not in our constructive endeavors, but in our attempts to evaluate critically the material to be analyzed. All that we can now say about the degree of representativeness of our sample is that we do not know how great or small it is; but that we shall have to assume in all of the analyses that our sample is fairly representative of the "universe" of stores.

Term "Store Year." The records described above constitute the only material of national scope easily

available for a study of consumers' credit. The realization of the shortcomings of the data could not in these circumstances deter us from making use of them. Nevertheless the knowledge was important as a warning against accepting any of the conclusions suggested by the analysis as positively established and firmly substantiated. The recognition of the imperfections of the material prompts us also to make certain adjustments in terms and procedure employed. Thus, we have adopted the term "store year" (with acknowledgments to Dr. Horace Secrist) for the unit of the subject matter of this investigation in order to indicate that the figures for each of the years refer in part to identical stores filing statements annually and in part to stores differing from year to year. To put it in another way: the number of store years is equal to the number of statements analyzed, whereas it is greater than the number of stores covered in the study.

Dating of the Material by Years. Another adjustment relates to the year as of which the statement is supposed to reflect the typical condition of the concern. It is a well-known fact that in all trades which are in the least seasonal considerably more selling is done in the second half of the year than in the first. This is obviously true of those lines which we have selected for investigation. For this reason, the figure for receivables in a statement dated in February or March is representative of the activities of the concern not in the calendar year for which it is given, but in the second half of the preceding calendar year. The same consideration holds good to a still greater extent for the various base figures to which we intend to relate receivables, i.e., current assets, net worth and, particularly, sales. It was therefore deemed advisable to treat statements dated before July 1 as reflecting conditions in the preceding calendar year and those dated after July 1 as repre-

sentative of the situation throughout the same calendar year.

3. Various Base Figures to Which Receivables Were Related

Ratio of Receivables to Sales
Ratio of Receivables to Current Assets, Its Merits and Limitations
Limited Comparability of This Ratio by Groups of Stores
Supplementary Uses of This Ratio
Ratio of Receivables to Net Worth

Ratio of Receivables to Sales. The absolute figures for receivables, however important in themselves, had to be related to the volume of business done in order to put on a comparable basis records for stores of different sizes, and for years with dissimilar business conditions. The sales for the year as of the end of which the balance sheet was prepared are ordinarily taken as the base. This practice is so usual and has so much common sense to defend it that we could not avoid following it wherever sufficient statistical material was available. It must be pointed out, however, that logically the two figures so related are incommensurable. The sales figures represent a result of continuous cumulation throughout the year and are, therefore, co-ordinate with the amounts of credit granted; while the receivables are the resultant of two diametrically opposed processes, those of addition and of subtraction. If the economic conditions during the year change, sales reflect the circumstances which obtained throughout the whole year, while the receivables are more strongly influenced by the economic conjunctures of the latter part of the fiscal year and hence anticipate in a way the conditions that will obtain in the early part of the next fiscal year. Finally, while the sales figure is in many of our statements an estimate in round numbers, the receivables figure is the

exact credit entry to the corresponding accounts, closing them for the year.

Ratio of Receivables to Current Assets, Its Merits and Limitations. A greater logical affinity subsists between receivables and total current assets; the former is contained in the latter as a part in the whole. Both of these are equally exact and reflect the conditions that obtained for the same period of time. As an index of the size of the business, however, assets are not so good as sales, the concern presumably existing to make sales and caring for assets only as an instrumentality necessary to bring about sales. This is reflected in the fact that as a rule current assets do not increase in direct proportion to sales for concerns in the same line of business, which is an immediate consequence of the greater rate of stock-turn for the larger stores. Similarly, the ratio of sales to assets tends to be greater in stores located in larger cities. Therefore, the ratio of receivables to current assets for large stores and establishments in large cities is likely to give an exaggerated impression of the amount of credit outstanding, particularly so when this ratio is compared with the same index for the other groups of stores.

Limited Comparability of This Ratio by Groups of Stores. Moreover, the usefulness of current assets as a base is dependent upon the representative value of the day as of which the balance sheet was prepared, to an extent almost as great as the usefulness of receivables as a measure of average credit outstanding throughout the year. If the accounting practice described above is followed, the figure for current assets which we obtain represents them at their lowest ebb during the year; current assets at the beginning or in the middle of an annual period of selling activity are much larger. Should the dates at which financial statements are rendered differ considerably from one group of stores to

the next within the same trade, a comparison of the ratios of receivables to current assets for these groups would be of doubtful validity. We might have endeavored to increase the value of this ratio by assuming that receivables vary in the same way during the year as total current assets, so that the ratio of the former to the latter remains more or less constant. These attempts would, however, be futile. For, while the similarity of variation may obtain in trades in which receivables constitute a large part of current assets, it would not be the case in all other trades: even for the former it would not be true under all conditions. The tenuity of the whole argument becomes still more obvious when we recognize that, were the ratio of receivables to current assets constant throughout the year, there would be no reason to expect any change from one year to the next, or any difference in the ratio as among several groups of stores, by whatever criterion we classified them. This would entirely destroy the significance of the ratio as a measure of the amount of credit outstanding.

Supplementary Uses of This Ratio. Aside from being an index of the amount of outstandings, this ratio serves a number of other purposes. Compared with the ratio of receivables to sales, it tells us indirectly about the relation of sales to current assets, which in its turn provides a clue to the rate of turn-over. Information of this kind is often valuable in an attempt to interpret the ratio of receivables to sales or to explain a peculiar deviation from the customary course followed by this ratio. Moreover, treated independently and taken at its face value, the ratio of receivables to current assets indicates what part of the inventory of the dealer is in the hands of his customers rather than under his immediate command. This is an important criterion in judging the efficiency of the credit management.

Ratio of Receivables to Net Worth. Finally the receivables have also been related to net business worth, i.e., the difference between current assets and current liabilities. This is probably the most stable base of all the three here mentioned, affected only by large new investments or withdrawals of capital and by very considerable business successes or reverses. Accordingly, this ratio ought to reflect more closely than the other two the fluctuation of receivables from year to year. Furthermore, this ratio is an index of the proportion of the liquid resources of the concern used in rendering the consumer a service to be distinguished from mere transporting and breaking-up of goods into smaller units. Taken in connection with the ratio of receivables to current assets, this ratio measures the capital turn-over of the business, or the proportion of current assets representing the amounts borrowed by the proprietor. When this proportion is compared with the ratio of receivables to current assets we obtain a valuable indication of the strain which the financing of his customers imposes upon the retail dealer and of the extent to which this burden is shifted along the line, to the jobber, the manufacturer or the banker.

4. Classifications Employed in This Study

Classification According to Geographic Divisions
Classification According to Population
Classification According to Size of Establishment
Classification According to the Population and Size-of-Establishment Criteria Combined

Classification According to Geographic Divisions. In studying the fluctuations of these ratios from year to year—a more detailed study based on annual balance sheets is of course impossible—it was thought inadvisable to lump all stores, independently of their size, or the section of the country in which they are situated, into a single undifferentiated group. The purpose

of any statistical description is to make more precise and definite what is vaguely, as a matter of everyday experience, a subject of common knowledge. To localize the investigated phenomena, to point out their modifications in the significantly different parts of the sphere of their manifestation, is the primary aim in the collection and analysis of statistics. That mercantile and credit practices are notoriously different in various sections of the country is well known; it has recently been confirmed by Secrist in his study of the retail clothing trade. Hence, a classification of stores on this principle would seem almost mandatory. For this study industrial regions, approximating the Census geographic divisions, were adopted[1]: one state out of the number belong-

[1] The industrial regions and the Census divisions corresponding to them are as follows:

1. New England—identical with the Census division of the same name.
   Connecticut, Maine, New Hampshire, Vermont, Massachusetts, Rhode Island.
2. Middle Atlantic—similar to the Census division of the same name, except that it comprises in addition Maryland and Delaware.
   Pennsylvania, New York, New Jersey, Maryland, Delaware.
3. Appalachian—corresponds to the East South Central division of the Census; the latter includes Alabama and Mississippi and does not comprise West Virginia.
   Kentucky, Tennessee, West Virginia.
4. Southeastern—similar to the South Atlantic division of the Census; the latter includes also Delaware, Maryland, and West Virginia and does not comprise Alabama and Mississippi.
   Virginia, District of Columbia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi.
5. Southwestern—identical with the West South Central division of the Census.
   Texas, Louisiana, Arkansas, Oklahoma.
6. Great Lakes—similar to the East North Central division of the Census, except that the former does not comprise Wisconsin.
   Indiana, Ohio, Michigan, Illinois.
7. Western Grain—similar to the West North Central division of the Census, includes Wisconsin in addition.
   Iowa, Minnesota, Wisconsin, North Dakota, South Dakota, Nebraska, Kansas, Missouri.
8. Mountain—identical with the Census division of the same name.
   Colorado, Montana, Idaho, Wyoming, Utah, New Mexico, Arizona, Nevada.
9. Pacific—identical with the Census division of the same name.
   California, Oregon, Washington.

All the available material for Connecticut, Pennsylvania, Kentucky, Virginia, Texas, Indiana, Iowa, Colorado, and California has been utilized in this study. We

ing to each division was selected, and all balance sheets available for the stores in these states were utilized as raw material. Such a procedure could not do justice to the larger cities which are economic centers for regions far transcending the confines of a single state. Therefore, to the nine states representing the nine regions, five individual cities were added,[1] and the material for each of them was tabulated separately.

Classification According to Population. Geographic location, however, is not the only important distinguishing characteristic of retail stores. To take an extreme example: one could not expect a store located in a place with a population under 2,500—a store which in all probability deals very largely with the farming population in the surrounding open country—to be subject to the same influences in its credit-granting activities as a store located in a city with a population of about 100,000. A classification of stores by the size of the place in which they are located was therefore considered promising. The classification provided for six groups,[2] some

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have taken the material for entire states, rather than for subdivisions of each of the several states in the region, because this is the simplest procedure. No useful purpose would have been served by a more careful selection, since the criteria by which the choice was to be guided were not known for reasons made clear above.

[1] The individual cities are: Boston, Cleveland, Kansas City, Mo., New Orleans, and New York.

[2] The class limits for these groups are as follows:

Groups of Stores	Population of Towns Wherein Situated
First group .	Less than 2,500
Second group. . . .	2,500 to 10,000
Third group.	10,000 to 25,000
Fourth group . .	25,000 to 100,000
Fifth group.	100,000 to 500,000
Sixth group.	500,000 upward

In a small number of cases the population for a town was given neither in the Census reports nor in the Rand McNally atlas; these towns have been included in the

of which were, in exceptional cases, combined into one. For the population of all incorporated places the 1920 Census figures have been utilized; for the unincorporated towns in which a few of the stores are located, we availed ourselves of the information provided by the Rand McNally atlas for 1920.

Classification According to Size of Establishment. Finally, the magnitude of the store itself appeared to be of significance; it was a necessary part of the description to specify how large or small stores differ in their credit policies and how fluctuations in business conditions affect the volume of credit granted by stores of different sizes. While this classification was adopted in principle, no cut-and-dried scheme with rigid class limits could have been applied to all lines of retail trade from the start. Sound statistical practice requires class limits to be drawn in such a way that there should be a clustering of cases falling within the class at the midpoint and a gradual thinning out of cases as the class limits are approached. It was necessary then to guide ourselves by a preliminary inspection of the available raw material in order to shift class limits according to the peculiarities of each line of trade as reflected in the sample. One thing, however, was clear from the beginning; the magnitude of the business was to be judged by the amount of sales it reported and, in the absence of these figures for a majority of stores, by the amount of total current assets.

Classification According to the Population and Size-of-Establishment Criteria Combined. For each of the classifications described, ratios have been obtained both for groups as a whole and for each of the years (or periods of years) to which the material comprised in the groups

first population group on the assumption that the omissions discovered were most likely to occur in the case of very small towns.

relates. The subdivision according to the chronological principle has been entirely omitted in the fourth and last classification, the description of which follows. This omission is not justified on any logical grounds; it was made necessary merely by the paucity of data. Putting it in another way, we may say that the disregard for the time characteristics of the material was forced upon us by the peculiarity of the fourth classification. This classification involves simultaneous grouping of the material according to two criteria, namely the size of the store and the population of the city in which it is located. That such a treatment of the data should be undertaken in addition to separate analyses by population groups or by size of store calls for an explanation.

Larger stores for obvious reasons tend to be located in larger cities. On the other hand, in the sample for the larger cities the larger stores probably affect the ratios considerably more than do the smaller stores. In tabulating our material by the population of the cities, we can never be sure that definite characteristics exhibited in the results thus obtained are imputable to the size of the city rather than to the predominance of larger stores in the group. The same is true of tabulation by the magnitude of the retail establishment: the peculiarities in the fluctuations of the ratios might be due to the predominance of large-city stores in one group and of small-city stores in another, rather than to the size of the store, which is the ostensible principle of classification. Accordingly, an investigation of the characteristics of the stores of a definite size broken up into classes according to their location in cities of definite magnitudes was deemed to be useful as providing a means of separating the influence of the two distinct factors—size of city and size of establishment—and of ascertaining their relative force.

5. Methods Followed in Computation and Comparison of Ratios

Method of Aggregates and Its Advantages
Manner of Comparing the Fluctuations of Ratios
Diagrammatic Presentation of the Results

Method of Aggregates and Its Advantages. In computing the ratios for the various groups, the method of aggregates was adopted. All receivables for the stores of a definite group were added and were divided by the sum of all sales or all current assets for the stores of this group in order to obtain the necessary ratios. This, of course, was not the only method possible. We could have computed the ratios for each store separately and then have taken a representative of the ratios relating to stores that belong to the group; this representative ratio might have been some sort of a mean, or a median, or a mode (the most common ratio). The use of the mode was adopted by the Harvard Bureau of Business Research in its investigations of retail trade, and thus seems to have the weight of authority on its side.

The reasons which made the method of aggregates preferable to all these are as follows. First, it is the least cumbersome method—a consideration rather important in dealing with a large number of cases. By following it we reduce the number of ratios to be computed from that equal to the total number of store years to that equal to the number of groups into which the store years are distributed. In the second place, the method of aggregates produces results identical with the weighted arithmetic average, when the weights are the various bases used to obtain the ratio. Any other average of ratios which we could take would of practical or theoretical necessity be unweighted. The weights, however, are important in our study, in which we are

interested in the changes *in volume* of credit outstanding, rather than in any change in mercantile practices *per se*. Even after we have by a minute classification descended to the groups smallest in logical extension, we still find considerable differences in the volume of business done by the stores belonging to the same group; in arriving at the amount of credit granted by all the stores of a certain class, it is scarcely possible to consider the ratios for the smallest and for the largest store in the class as of equal importance. Thirdly, the distribution of the ratios cannot by the nature of things be symmetrical. For all of the three ratios there is a rigid lower limit (zero) with the tendency for a considerable number of cases to concentrate around it. For such distributions a median is scarcely representative, and the mode is even difficult to locate. The ratio of aggregate receivables to aggregate sales or to aggregate current assets or to aggregate worth appeared then to be the easiest to compute, the most justifiable statistically, and the most "natural" from the standpoint of the uninitiated layman.

The reliability of ratios based upon aggregates depends more than the reliability of other ratios upon the number of cases from which it was derived. To enable the reader to judge for himself, we provide in the introduction to the study of each retail line special tables indicating the number of store years in each of the groups into which the material was classified. It should however be added that for groups containing five store years or less, no ratios were computed, the number of cases being too small to warrant it.

Manner of Comparing the Fluctuations of Ratios. With the ratios on hand, it remained to compare the changes by years in the larger stores with those in the smaller stores, or in larger cities and smaller cities, or in the Eastern and Western states, and so forth. To facilitate

this comparison, it appeared useful to take account of the differences in the range and the intensity of the fluctuations of the ratios as among different states, cities of different magnitude, and groups in the other classifications. It is obvious that the group of stores with higher ratios will exhibit greater fluctuations by years than the stores with smaller ratios. In order to make their fluctuations comparable, it was decided to relate them to the magnitude of the fluctuating ratio: to avoid the use of a shifting base, the simple arithmetic average of the ratios was used as a base. Thus, in comparing the change in the ratios for stores of various magnitudes by years, instead of juxtaposing the actual ratios, we proceed as follows: obtain the simple arithmetic average of the ratios for the various years for each group of stores classified by size of establishment, divide the constituents of each average by it, and then compare these indices of ratio fluctuations. If this index figure for the group of the smallest stores for the year 1924 is the same as for the group of the largest stores, we may safely conclude that the business conditions of 1924 caused both the largest and the smallest firms to introduce similar changes in their credit and collection policies.

Diagrammatic Presentation of the Results. The same procedure has been followed in charting some of the more important results. Instead of plotting the actual magnitudes of the ratios and adjusting the scales to these magnitudes, the percentage deviations of the ratios from the mean for the distribution have been plotted and a uniform scale has been used in all of the charts.[1] In the bar diagrams, which illustrate the variation of ratios by groups, the mean of the ratios for the groups in question has been equalized to 100. In the curves presenting

[1] In printing, some of the charts were reduced in size so that the statement in the text does not apply to the figures as they appear in the book. It is true, however, that the relation between the divisions on the vertical and on the horizontal scales is the same for all charts.

the year-to-year movement of the ratios by separate groups, the magnitudes plotted are the quotients of the ratios by the means of all the ratios for each of the groups (obtained as described in the preceding paragraph) multiplied by 100. This procedure recommended itself, because it enabled us to present to the reader both the actual magnitudes of the ratios (in the tables) and the relative magnitudes based on the ratios. The availability of the latter should facilitate comparisons by groups and by years.

PART ONE

CREDIT IN RETAIL CLOTHING STORES

1. INTRODUCTION

Sources and Selection of Information. The information upon which this study of credit practices in retail clothing stores is based was obtained from the American Clothing Manufacturers Bureau, Inc., a semi-private credit-clearing organization, enjoying the co-operation of retailers and wholesalers in this line of business. The stores included in the survey are strictly retail establishments; those doing any jobbing or having manufacturing departments have been eliminated whenever it was possible to establish their identity. Moreover, only strictly clothing stores were included: firms selling dry goods and clothing, or clothing and furnishings, etc., or, finally, general merchandise stores, have been excluded. On the other hand, no distinction has been made between cash stores, cash-and-charge stores, and stores

designated as instalment houses. Our task has been to analyze the credit practices in the clothing trade as a whole rather than in any particular type of clothing retailing.

Geographic Distribution of Stores Covered. As a result of the selection we obtained a total of 3,470 store years, of which 1,835 reported sales. These store years were distributed by states and individual cities as shown in Table I:

TABLE I

DISTRIBUTION OF STORE YEARS PERTAINING TO RETAIL CLOTHING ESTABLISHMENTS IN THE STATES AND INDIVIDUAL CITIES COVERED BY THIS SURVEY

Field Covered by Survey	1925		1924		1923		1922		1921		Prior to 1921		Total	
	1*	2	1	2	1	2	1	2	1	2	1	2	1	2
California.	98	59	118	68	44	26	46	18	21	11	7	4	334	186
Colorado.	22	17	29	21	25	14	17	8	11	8	8	6	112	74
Connecticut	61	29	51	35	24	13	18	4	11	5	12	4	177	90
Indiana.	39	22	75	41	25	17	28	18	19	10	10	7	196	115
Iowa . . .	43	33	70	45	36	20	25	13	20	12	8	2	202	125
Kentucky.	25	15	42	27	27	14	24	10	10	4	1	1	129	71
Pennsylvania	269	143	295	158	139	56	80	38	48	23	59	32	890	450
Texas......	137	89	198	116	122	72	84	53	45	28	38	26	624	384
Virginia....	33	19	56	27	18	8	17	7	15	6	1	—	140	67
Boston.....	50	29	29	9	12	2	7	2	3	2	6	4	107	48
Cleveland.	32	18	34	20	11	4	15	5	9	3	2	—	103	50
Kansas City, Mo.......	11	4	20	4	11	3	3	2	7	—	2	1	54	14
New Orleans	8	3	7	3	4	2	1	—	1	1	1	—	22	9
New York...	125	61	125	59	49	10	28	6	28	8	25	8	380	152
Total.....	953	541	1149	633	547	261	393	184	248	121	180	95	3470	1835

* The first column under the year shows the total number of store years; the second column shows the number of store years reporting volume of sales.

Distribution by Population Groups. The distribution by population groups of store years reporting sales is

shown in Table II. On the whole, the number of cases in each of the groups is about the same. New York City, providing nine-tenths of the store years for the group of cities with a population of over 500,000, accounts both for the heavy representation of cities with a population of 500,000 and over in the years 1924 and 1925, and for the large number of store years in this group in the total for all years.

TABLE II

DISTRIBUTION OF STORE YEARS BY POPULATION GROUPS

Cities	1925	1924	1923	1922	1921	Prior to 1921	Total
Population under 2,500	74	78	41	47	24	21	285
Population 2,500 to 10,000 .	78	132	68	35	21	19	353
Population 10,000 to 25,000	77	90	45	27	18	16	273
Population 25,000 to 100,000. .	86	93	40	28	18	13	278
Population 100,000 to 500,000	61	82	31	15	18	9	216
Population 500,000 and over....	165	158	36	32	22	17	430
Total..........	541	633	261	184	121	95	1835

Distribution by Size-of-Establishment Groups. By size of establishment, these store years were classified in accordance with their volume of sales into eight major groups, which have, however, undergone, in the process of analysis, certain modifications. The distribution of these store years by the amount of annual sales is given in Table III.

Ratios Used in the Study. Bearing in mind this picture of the raw material on which all our tabulations and ratios are based, let us pass to an analysis of the ratios computed. Throughout, three ratios were obtained: the ratio of accounts and notes receivable to sales, hereafter referred to as the "sales ratio"; the ratio of accounts

TABLE III

DISTRIBUTION OF STORE YEARS BY AMOUNT OF ANNUAL SALES

Stores	1925	1924	1923	1922	1921	Prior to 1921	Total
Annual sales under $15,000	37	41	15	17	16	9	135
Annual sales $ 15,000 to $ 30,000	120	125	35	41	28	12	361
Annual sales 30,000 to 60,000	185	207	91	63	38	30	614
Annual sales 60,000 to 90,000	80	98	50	27	18	17	290
Annual sales 90,000 to 120,000	44	49	25	14	9	9	150
Annual sales 120,000 to 150,000	21	43	8	6	5	5	88
Annual sales 150,000 to 180,000	21	11	11	3	1	4	51
Annual sales 180,000 and over	33	59	26	13	6	9	146
Total	541	633	261	184	121	95	1835

and notes receivable to assets, abbreviated to "assets ratio"; and the ratio of accounts and notes receivable to net business worth, or the "worth ratio." All these ratios were computed for the same number of store years, i.e., only for the store years for which the amount of sales is given. There is a single exception to this: in the tabulation of the store years by states and individual cities, information for all stores, irrespective of their indication of the amount of sales, was used as well; so that for these divisions we have in addition assets and worth ratios based on a considerably larger number of store years than that utilized in all other classifications.

Outline of the Presentation. In passing to the presentation of the results of this investigation, we shall stop for a moment to explain the outline of our exposition. Our first task will be to obtain a summary view of the situation, treating the period covered in the study as a whole, that is, disregarding time as a principle of classification. After that, we shall shift our attention to the annual subdivisions within each of the major classes.

This will enable us to ascertain the distributions of ratios by various classes for each of the years separately, leading up to a comparison of the corresponding distributions in successive years; on the other hand, it will render possible a study of year-to-year changes in the ratios for each of the classes separately, resulting in a comparison of the annual movements for the separate classes. In both parts of this presentation we start with the analysis by geographic divisions, taking up later the comparison of ratios by population and size-of-establishment groups.

Comparison with the Secrist Study. Throughout the exposition a comparison is made, wherever possible, with the results obtained in a similar study conducted by the Bureau of Business Research of the Northwestern University School of Commerce and directed by Dr. Horace Secrist.[1] Although his investigation differs from ours in the period of time covered, in the methods followed, and in the aim pursued, the results of the two studies are strikingly similar. The persistence of this similarity where we could scarcely expect it strengthens our confidence in the reliability of the raw material which

[1] In co-operation with the National Association of Retail Clothiers, Dr. Secrist surveyed 415 retail clothing stores, obtaining information for them for the years 1914, 1918, and 1919. The final results were published in a set of six volumes entitled *Costs, Merchandising Practices, Advertising and Sales in the Retail Distribution of Clothing*, Prentice Hall, 1921, of which we used only the first volume on *Sales and Sales Ratios in Retail Clothing Stores 1919, 1918 and 1914.* This study is not strictly comparable to ours and no particular weight should attach to the conclusions drawn from such comparisons. The data of Secrist were collected under his supervision specially for the purpose of his investigation, while our information, as stated above, was collected by organizations interested in the intensely practical matter of suggesting reliable credit rating. The stores covered by Secrist, although they are fewer in number, are distributed more evenly over the country. The base of his ratios is the amount of net sales, presumably exact to a cent, while that of our ratios is the amount of gross sales, often an estimate as given by the reporting store. Finally, and this is, perhaps, the most important difference, the accounts receivable that he is relating to sales are average monthly accounts outstanding and not receivables on the date as of which the balance sheet is prepared. The former figure indicates far more accurately than the latter the average amount of credit granted by the store and the average length of time for which it was outstanding.

we have utilized and in the critical *force de résistance* of the few conclusions which have been drawn.

2. The Period as a Whole (Tables IV–IX, Charts 1–6)

TABLE IV

DISTRIBUTION OF RATIOS BY VARIOUS GROUPS OF STORES FOR THE PERIOD AS A WHOLE

	Stores Reporting Sales			All Stores	
	Sales Ratio	Assets Ratio	Worth Ratio	Assets Ratio	Worth Ratio
States and individual cities:					
California	.066	141	.197	173	.280
Colorado	069	.137	156	226	.271
Connecticut	.116	.205	292	193	267
Indiana	.068	128	185	126	169
Iowa	072	133	181	159	194
Kentucky	.118	214	273	252	.315
Pennsylvania	069	.122	169	155	.211
Texas	.075	.140	.184	166	.218
Virginia	.136	246	322	.245	.333
Boston	.129	.265	403	199	248
Cleveland	.130	.249	323	224	.304
Kansas City	.036	090	110	.131	174
New Orleans	.185*	.297*	371*	215	.262
New York	053	.128	202	116	161
Population groups: cities:					
Population under 2,500	083	141	186		
Population 2,500 to 10,000	071	.116	.154		
Population 10,000 to 25,000	067	109	.139	169	.219
Population 25,000 to 100,000	.078	164	223		
Population 100,000 to 500,000	102	.201	275		
Population 500,000 and over	081	182	.269	185	262
Size-of-establishment groups:					
Stores with annual sales					
under $15,000	051	.060	073		
$ 15,000 to $ 30,000	052	080	.103		
30,000 to 60,000	069	.111	146		
60,000 to 90,000	.084	148	203		
90,000 to 120,000	082	154	212		
120,000 to 180,000	.076	.143	204		
180,000 to 300,000	.087	177	251		
300,000 to 1,000,000	.089	220	290		
1,000,000 and over	082*	173*	.251*		

* Ratio based on less than 10 store years.

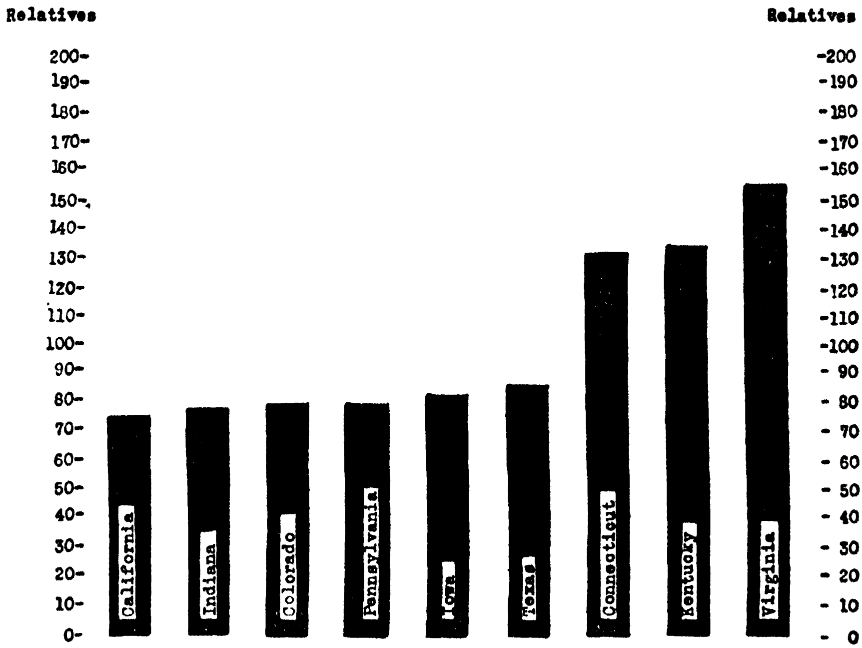


FIG. 1. SALES RATIO RELATIVES BY STATES. BASED ON TABLE IV

A. ANALYSIS BY GEOGRAPHIC DIVISIONS

Two Sets of Ratios. As stated above, for the classes arranged according to the geographic principle we have two sets of ratios: one based on stores reporting sales, and the other on all store years. The latter are twice the number of the former. We shall begin with the first set, since it includes the sales ratio, the most important of the three; we shall then turn to the second for a verification and modification of our inferences.

Sales and Assets Ratios for Stores Reporting Sales. On examining Table IV and Figure 1, we find that the sales ratio is highest for the two Southern states, Virginia and Kentucky, and somewhat lower for Connecticut. After that there is a big gap in the distribution, until the ratio for Texas is reached; it leads the group of states with the lower ratios, which are scattered within a rather narrow range. The assets ratio based

on the same material can tell more about this last group of states. The Far Western states, Colorado and California, have assets ratios following closely that of Texas. The ratios for the Mid-Western states, Iowa and Indiana, are still lower; and finally Pennsylvania, representing the Middle Atlantic region, is at the extreme lower end of the distribution.

Relation of the Assets Ratio to the Sales Ratio. The transition from the discussion of the sales ratios to that of the assets ratios as made above raises the question of the interchangeability of these ratios. Is it to be expected that the distribution of the assets ratios will be similar for all of our classifications to that of the sales ratios? The relation between the magnitude of these ratios depends mainly upon the rapidity of the turn-over: if there is no reason to expect a change in the turn-over, as we go from one group to the next in the same classification, there is ground for believing that the distribution of the ratios of the two types will be similar. In classification by population or by size of establishment, such a similarity is then not likely to occur; in the state and city analysis the existence of a resemblance is more probable.

When the two types of ratios elicited from identical store years are compared for each of the states, we find our expectation fulfilled. The assets ratios for all of the states except one are equal to the corresponding sales ratios multiplied by from 1.8 to 2.0; only for California is this coefficient over 2.1, raising this state from the very last place in the distribution of the sales ratios to the fourth place in the distribution of assets ratios. This single discrepancy between the two distributions is due to the fact that the larger stores or stores in the larger cities probably have a greater weight in the sample for California than elsewhere.

Assets Ratios Based on All Store Years; Conclusion for States. Bearing in mind this possibility of a change in the composition of the sample for the state, we shall pass to a consideration of the distribution of the assets ratios based on all store years irrespective of their showing of sales. The situation observed here is about the same as for the smaller number of store years, except that the Far Western states have moved still higher up

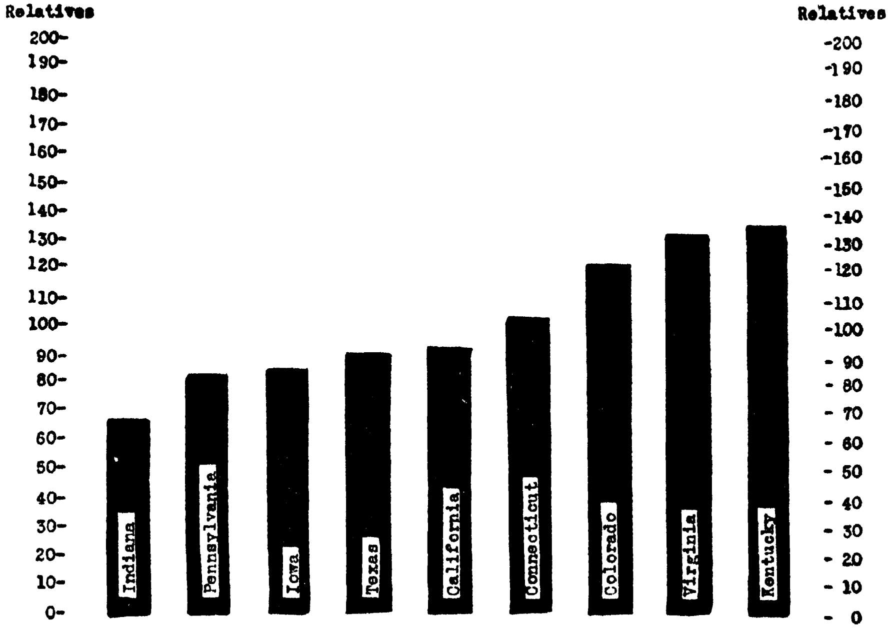


FIG. 2. ASSETS RATIO RELATIVES BY STATES. BASED ON TABLE IV, COLUMN 4

the scale. We still have the two Southern states, Virginia and Kentucky, leading, followed at a considerable distance by Connecticut. The Far Western states, Colorado and California, have their ratios higher than that of Texas, the latter being followed by Iowa, Pennsylvania, and Indiana in the order named. A comparison of this distribution with the two analyzed above, permits us to conclude that the largest amount of credit, relative to volume of business done, is outstanding in

the Southern states, Virginia and Kentucky; that Connecticut comes next in this respect; and that Texas holds fourth place, combining the Southern laxity of credit terms with the Western dearth of free money; that the Far Western states, Colorado and California, occupy the middle positions in the range; and that in Pennsylvania and the Mid-Western states, Indiana and Iowa, the smallest relative amount of credit is outstanding.

Worth Ratio and Its Significance. The distribution of the worth ratios follows closely that of the assets ratios, as one would infer *a priori* from the fact that current net worth is a wellnigh constant fraction of current assets, since balance sheets are as a rule prepared at the time when the amount of funds borrowed from the outside is reduced to the more or less constant minimum. The important feature about worth ratios is that their relation to the assets ratios varies according to the degree of economic development of the state. States predominantly agricultural, such as Colorado, Iowa, Kentucky, Texas and Virginia, have their worth ratios from 1.1 to 1.4 times as large as the corresponding assets ratios; while states in which industry and commerce have progressed to a greater extent, such as California, Connecticut, Indiana and Pennsylvania, have their worth ratios exceeding the assets ratios by uniformly larger percentages. The stores in the latter group of states are more largely financed by funds from the outside than are those in the agricultural states. It is to be concluded then that borrowing by retail establishments in the clothing trade is not dependent upon the amount of credit granted. It happens, however, that quite the contrary can be observed; the stores in the Southern states, extending the greatest relative amount of credit, borrow less than those in states like Pennsylvania or Indiana, the sales and assets ratios of which are very low.

Ratios by Individual Cities. The analysis by individual

cities is of less interest, since the magnitude of the ratios is affected by local peculiarities less significant than the

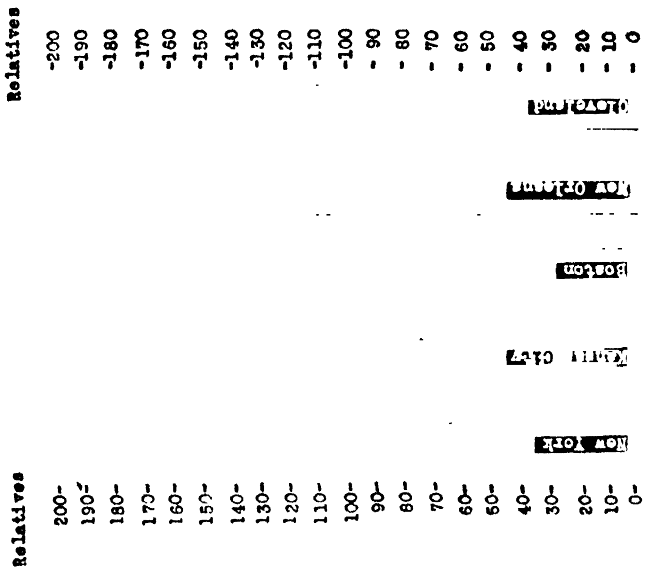


FIG. 4. ASSETS RATIO RELATIVES BY INDIVIDUAL CITIES. BASED ON TABLE IV, COLUMN 4

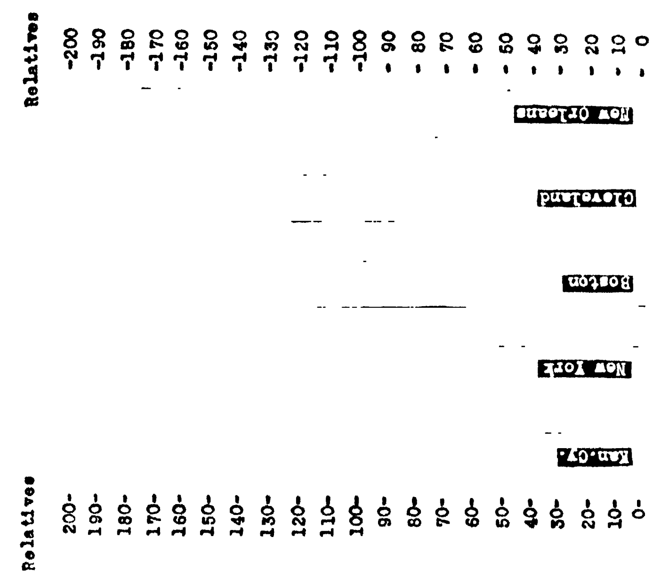


FIG. 3. SALES RATIO RELATIVES BY INDIVIDUAL CITIES. BASED ON TABLE IV

regional differences detected in the state analysis. Moreover, the number of store years here is smaller for each

of the divisions, running particularly low for New Orleans and Kansas City, and making the comparison between the cities less reliable. Furthermore, the magnitude of the turn-over as inferred from a comparison of the assets ratio with the sales ratio varies considerably from one city to the next; this impairs the reliability of the conclusions drawn from an analysis of the assets ratios based on all store years, where there are no sales ratios with which to compare them.

Nevertheless, it can be stated with assurance that the largest amount of credit outstanding, relative to the volume of business done, is to be found in the New Orleans stores; that large amounts of credit are on the books of stores in Cleveland and Boston; and that those least generous with credit are the stores in New York and Kansas City. The situation in New Orleans, Cleveland and Kansas City is worth remembering; in the following studies, it will be shown that it is the same in lines of business other than clothing and that it is, therefore, produced by forces not restricted in their operation to a particular trade. In view of what has been found in the state analysis, it is not surprising that New Orleans, a Southern city, should rank so high in credit granting. Cleveland is a typical industrial city; there the need for credit on articles involving an investment that looms large when compared to an ordinary wage earner's weekly pay is most pronounced. Finally, Kansas City, more directly than any of the other four cities dependent upon the fortunes of agriculture in the Mid-Western plains, apparently exhibits the effects of agricultural depression.

Turning to the worth ratios, we find that a comparison with the corresponding assets ratios reveals a situation similar to that found in the state analysis. The stores in New York, Cleveland and Boston depend more largely on borrowing from the outside than do the

stores in Kansas City and New Orleans. This is obviously correlated with the economic development of the city, rather than with the amount of credit granted by the stores to their customers.

Comparison with Secrist's Results. We are at the end of the analysis by geographic divisions. As the concluding point, by way of testing the reliability of our ratios, let us now compare the nature and magnitude of sectional differences as ascertained in this analysis with the same phenomena as found by Secrist in his study covering the period 1914–1919.[1] To put our results in a form comparable to those of Secrist, we have to combine some of our states and individual cities into groups co-extensive with the broader geographic divisions used by him. However, the ratios even for these broader groups are not comparable to those of Secrist, since the former relate mainly to the years 1921 to 1925, while his data cover an earlier period. Only when both our ratios and those of Secrist are reduced to relatives, i.e., presented as percentages of their averages, is a true comparison of the results facilitated. The corresponding ratios and their relatives appear in Table V.

TABLE V

SALES RATIOS 1914–1919 AND 1921–1925 BY GEOGRAPHIC DIVISIONS

Geographic Divisions	Ratio of Outstanding Accounts to Sales		Sales Ratio Relatives	
	Secrist's	Ours	Secrist's	Ours
East	054	078	83	99
East North Central	074	087	114	110
West North Central	065	070	100	89
South	086	094	132	119
Far West	046	066	71	84

[1] *Stock and Sales Ratios in Retail Clothing Stores 1919, 1918 and 1914*, Prentice Hall, 1921, p. 82.

While our ratios are uniformly higher than those of Secrist,[1] the distribution of both ratios by regions is similar. The South has in both cases the highest ratio; the next in magnitude is the ratio for the East North Central division, including stores in such states as Illinois, Ohio and Indiana; on the other hand, in the Far West the amount of credit granted is less than in any other section of the country, as shown by both of the ratios. The results of this comparison must be declared satisfactory and reassuring as to the plausibility of the conclusions based upon the analysis of our data.

B. ANALYSIS BY POPULATION GROUPS

Introductory Remarks. In this part of the exposition we shall deal with the connection between the type of market served by a retail establishment and the amount of credit which it grants. The magnitude of the city in which a store is located, as measured by the population of the city, is used as a characteristic of the market. While this is superficial and insufficient for a complete definition, it is good enough for a first approximation and is the most accessible quantitative criterion. According to the old view of the subject, the relative amount of credit should decline with the increase in the population, since, it was claimed, the relations between the customers and the proprietor of a store cease to be intimate and friendly and become more businesslike or competitive as the population increases. An analysis of the ratios will show that, whatever may have been the reasons for the old view, it holds no longer.

Sales and Assets Ratios by Population Groups. The sales ratio is fairly high for stores in the very small inhabited places, declines definitely as we pass to stores in larger towns, and is at its lowest for cities with a population

[1] This is due, as will be made clear in the analysis by years, to the fact that less credit was granted in 1918 and 1919 than either before or after the war.

of from 10,000 to 25,000. It rises again for stores located in fair-sized cities (population 25,000 to 100,000) and reaches its highest point for large cities with a population of from 100,000 to 500,000. For the very large cities, i.e., those with a population of 500,000 and over, the sales ratio is about the same as for the smallest towns. The same situation is illustrated by the assets ratios based on store years showing sales, although here

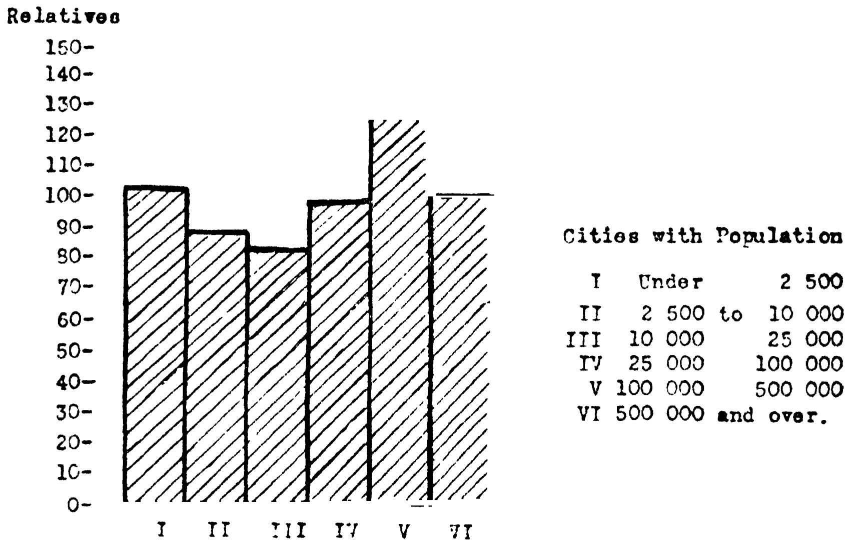


FIG. 5. SALES RATIO RELATIVES BY POPULATION GROUPS. BASED ON TABLE IV

the increase in turn-over, which unduly raises the ratios for the larger cities, is a disturbing factor. Finally, the assets ratio based on all store years adds another sidelight to the picture: the ratio for the stores in cities of 500,000 and over is sufficiently greater than that for stores in smaller cities to indicate that the relative amount of credit is not less for the very large cities than for the rest of the country.

Conditions Determining the Credit Policy of Small-Town Stores. Any explanation of the change in the amount of credit outstanding with the increase in the popula-

tion of the city must, in this study at any rate, remain hypothetical. Only as such must the following considerations be treated. The small towns, which are frequently mere railroad junctions, are the commercial centers of the open-country farming areas. Their stores deal not only with the inhabitants of the town proper, but also with those of the surrounding districts. This makes possible the existence of large stores in these villages. Due to the discontinuity of agricultural production, farmers tend as a rule to need credit for at least six months in the year. If the retail dealer is to survive, he must adapt himself to the market served and must meet this demand for credit. The smaller the town, the more urgent are such demands and also the greater is the ability of the dealer to satisfy them. The area served by stores in small towns is usually more than proportional to the size of the town, as measured by its population; the smaller the town, the more limited is the circle of prospective patrons, the more does every storekeeper know about the trustworthiness of each of the farmers in the vicinity and about the safety of selling to them on credit. This is probably the reason for the fact that sales and assets ratios decline as we pass from the very smallest of these country towns to the larger. While the stores in the latter towns serve a still larger agricultural population than the stores in the former, they are less anxious to sell on charge; the farmers shopping there are attracted mainly by larger selection and lower prices.

Factors Determining Credit Extensions by Stores in the Larger Cities. The distribution of the ratios by population groups is bimodal: it has two high points. To every statistician this is a sure sign of two forces being at work, each of them being responsible for a single peak and the slopes in its neighborhood. The explanation offered in the preceding paragraph would not suf-

fice to make it clear why from a certain point on the ratios increase with the population of the city and reach another peak with the large cities. In the larger towns and cities, the market consists of people engaged, not in agriculture, but in industrial and commercial pursuits. Their need for credit is not so general with regard to kind of expenditure and perhaps does not involve so long a time; nevertheless it is real and urgent in the case of purchases of values which are relatively large in comparison to the weekly or monthly income. The retail dealer learns to meet this demand and overcomes in the process the unfavorable effects of the fluidity of urban population. The old-fashioned and still widely prevalent belief in the impossibility of much retail-store credit in the large cities is no longer justified, because credit has been made possible by (1) the formation of stable neighborhoods within the residential districts of the large cities, with stores to cater to such limited markets; and by (2) the organization of credit departments by the larger stores, which renders the taking of credit risks as safe as possible. The pressure of high overhead expenses in the larger cities makes necessary the maintenance of sales at a constant high level; and the sale on credit is one of the means of obtaining a customer and keeping him.

Assets Ratios and Worth Ratios by Population Groups. Let us turn now to the more specific consideration of the assets ratio and of the relation of the worth ratio to the assets ratio for various population groups. The assets ratio, as has already been pointed out, is influenced by the rapidity of turn-over. It cannot be taken as a reliable index of the amount of credit extended, if there is ground to expect a change in the rapidity of turn-over as we pass from one group of stores to the next. The population classification presents a good illustration of such a case. The quotient of the assets

ratio over the sales ratio is within the limits of 1.6–1.7 for stores in towns with a population under 25,000 and is in the neighborhood of 2–2.25 for stores in the larger cities. As expected, the turn-over increase with the size of the city intensifies the changes in the assets ratio. A similar tendency can be observed in the relation of the worth ratio to the assets ratio; the quotient of the former by the latter rises with the size of the city, indicating an increasing dependence upon borrowed funds as the store shifts its location from smaller to larger cities. It should be said that this is in line with what has been found in the state analysis: the tendency of stores located in the more developed industrial states to borrow from the outside relatively more than do the stores in the agricultural states.

C. ANALYSIS BY SIZE-OF-ESTABLISHMENT GROUPS

The Variation of Sales Ratios. A comparison of the sales ratios for stores classified by volume of business

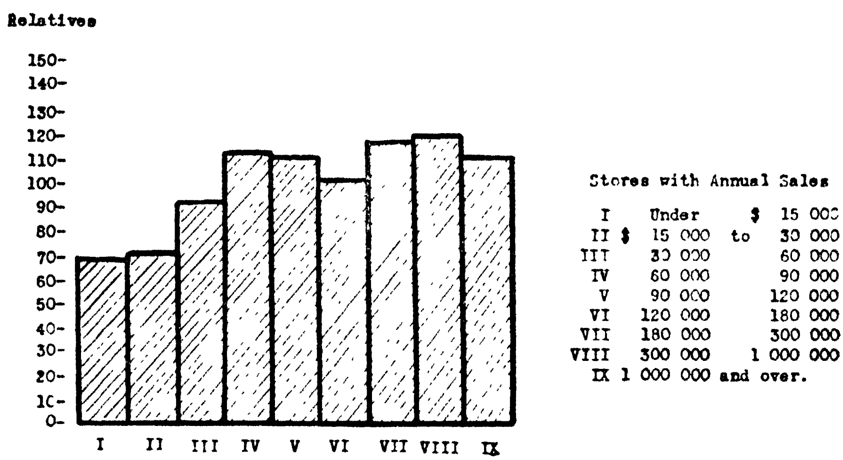


FIG. 6. SALES RATIO RELATIVES BY SIZE-OF-ESTABLISHMENT GROUPS BASED ON TABLE IV

transacted leads to the conclusion that the amount of credit outstanding for each dollar of sales is on the whole increasing with the amount of annual sales. True, the

tendency observed is not regular and clear-cut. The rise of the ratio is interrupted by a slight falling off for stores with sales of from $90,000 to $180,000. The ratio for the largest stores is somewhat lower than for the preceding group; the last, however, is to be discounted, since this ratio is based on less than 10 store years and hence is not so reliable, in the third decimal place at any rate. The disturbances in the rise of the ratio and its tapering off at the end can scarcely prevent us from recognizing a definite relation between the volume of sales and the relative amount of credit outstanding.

Comparison with the Secrist Study. To reassure ourselves as to the reliability of our sales ratio and as to the existence of the tendency described above, let us now turn to the sales ratios obtained by Secrist for an earlier period.[1] His classification of stores by sales differs somewhat from ours in the distribution of class limits, so that we have to do some joining of several of his groups into one, and of some of our classes into one in order to achieve the maximum comparability for the results of both studies. A comparison of the ratios thus obtained is presented in Table VI:

TABLE VI

SALES RATIOS 1914–1919 AND 1921–1925 BY SIZE-OF-ESTABLISHMENT GROUPS

Secrist's Classification of Stores	Secrist's Ratios	Our Ratios	Our Classification of Stores
Annual net sales:			Annual sales:
under $ 20,000..	.077	.051	under $15,000
$ 20,000 to 60,000..	.060	.069	30,000 to $60,000
60,000 to 80,000..	.069	.084	60,000 to 90,000
80,000 to 140,000..	.071	.079	90,000 to 150,000
140,000 to 180,000..	.058	.077	150,000 to 180,000
180,000 to 300,000..	.062	.087	180,000 to 300,000
300,000 and over....	.075	.087	300,000 and over

[1] *Op. cit.*, p. 82.

Disregarding Secrist's ratio for the smallest stores, we find that, except for the fact that Secrist's ratios are lower than ours, their distribution by size-of-establishment groups is quite similar to that of our ratios. The ground for disregarding the ratio for stores with sales under $20,000 is that it is based on a small number of store years (39), and that it is the only one which is higher than our ratio for the corresponding group of stores. Moreover, this ratio appears to be based on reports for the years 1914 and 1918 only, there being no reports for stores of that size for the year 1919, when the ratios were at their lowest; the ratios of all other groups in Secrist's work are based in part on 1919 data. The results of the Secrist study will appear still more reassuring if we quote here his ratios for broader groups of stores as set up by himself in order to smooth out the variations of the ratio. These are:

Annual net sales under $40,000	.065
Annual net sales $ 40,000 to $ 80,000	.062
Annual net sales 80,000 to 180,000	.068
Annual net sales 180,000 and over	.071

Change in Credit Policy with the Increase in Size of Establishment. Why should larger stores grant relatively more credit than smaller ones and what is the factor that prevents this from taking place in all cases? Like all of our explanations, this is offered only as a tentative realistic interpretation of the variation of the ratios. Larger stores are better able to meet the demand of patrons for credit than smaller stores. In the first place, they are better equipped to bear the financial burden of such a service to their customers, inasmuch as they have freer access to the market for loans themselves. In the second place, it is safer for them to extend more credit, since as a rule they have better organized credit and collection departments. Moreover, the larger stores are *ipso facto* the older stores, since few large stores are

established as such, most of them growing to be big from small beginnings; this implies that such stores have a larger number of old steady customers, whose trustworthiness has been tested a number of times and found satisfactory.[1] On the other hand, the larger the store, the more likely it is to specialize in doing mainly a cash business or mainly a credit business. In selecting our material we have paid no attention to this characteristic;[2] so that when we come to the groups including larger stores, a variation in the proportion of cash stores to credit stores in the group distorts the ratio to such an extent as to affect the definite character of the tendency which we have been at pains to ascertain.

Assets Ratios and Worth Ratios. Turning now to the assets ratios and worth ratios, we may establish the very same tendencies that have been found to exist in the population-group analysis. The larger the store, the greater is, as a rule, its turn-over and the higher, *cæteris paribus*, is its assets ratio: the quotient of the assets ratio by the respective sales ratio increases, therefore, with the size of the store. Thus the growth of the assets ratio with the size of the store is a result of two factors: the increase in the relative amount of credit outstanding and the rise in turn-over. That is the reason why in our table there is just one interruption (and a slight one, too) in the climb upward of the assets ratio, while the sales ratio is considerably more irregular.

The quotient of the worth ratio by the assets ratio increases with the size of the establishment with minor

[1] This last consideration suggests that perhaps one of the criteria by which a successful expanding retail establishment can be recognized is the relative amount of credit which it grants. We do not mean to say that because a store extends more credit, it fares better, the connection is rather the other way about, i.e., only those stores that have struck strong roots in the place of their location, that fit thoroughly into their environment, that flourish by retaining their old customers and by acquiring continually new patrons, are in a position to render this service without any strain or danger to themselves.

[2] Neither did Secrist, as far as can be inferred from his published results.

interruptions to be observed when very large stores are reached; the larger the store, the more, relatively, does it borrow from the outside. This substantiates the statement made above that the larger the store, the freer is the access which it has to the market for loans for its own use.

D. CONCOMITANT EFFECTS OF THE SIZE-OF-ESTABLISHMENT AND POPULATION FACTORS

Introductory Note. We cannot consider our analysis completed, as long as the relation between the size of a store and its location remains undetermined. We have found that the relative amount of credit granted increases both with the size of the store and with the magnitude of the city in which the store is located. Now it is obvious that the large stores are likely to be located in large cities. Thus (1) the ratios for the stores located in large cities are probably influenced to a considerable extent by the large stores included in this group; (2) the ratios for the group of stores with a large amount of sales probably reflect to a greater degree the situation in stores located in larger cities than that in stores located in smaller cities. After all, what is it that is more responsible for a high ratio and a large amount of credit outstanding, the type of market served or the size of a retail establishment? Or is there a close correlation between the two factors, so that an establishment of a definite size goes very frequently, if not always, with a market of a definite type?

Variation of the Sales Ratio. To answer these interesting questions, we have subdivided each of our size-of-establishment groups into population sub-groups, which amounts to the same thing as subdividing each of the population groups into size-of-establishment sub-groups. After the sales ratio is computed for each of these sub-groups, it can be seen how this ratio changes

for stores of each particular size, as the stores shift their location from smaller to larger cities; or how the sales ratio for stores located in cities of each particular population group changes, as we go from smaller to larger stores within the same population group. To examine these changes we have merely to follow first the rows in Table VII and then the columns. For the reader's convenience, the essential points brought out by the table have been summarized separately.

TABLE VII

SALES RATIO BY SIZE-OF-ESTABLISHMENT AND POPULATION GROUPS

Stores	Cities with Population					
	Under 2,500	2,500–10,000	10,000–25,000	25,000–100,000	100,000–500,000	500,000 and Over
Annual sales						
under $ 15,000	.079	.081	.073	.043	.054	.017
15,000 to 30,000	.083	.046	.040	.073	.066	.027
30,000 to 60,000	.080	.058	.059	.102	.068	.056
60,000 to 90,000	.076	.082	.063	.103	.115	.068
90,000 to 120,000	.048	.092	.072	.094	.104	.084
120,000 to 180,000	.106	.088	.052	.068	.122	.058
180,000 to 300,000	.167*	.068	.107*	.076	.097	.066
300,000 to 1,000,000	——	.053*	.084*	.069	.155*	.101*
1,000,000 and over	——	——	——	.076*	.077*	.112*

* Ratio based on less than 10 store years.

For each size-of-establishment group the distribution of maxima and minima is shown in Table VIII, while the corresponding distribution for each population group is presented in Table IX.

Credit Policy of Stores Differentiated by Size as Affected by Location. An examination of the fluctuations of the ratios in each of the rows of Table VII reveals that what has been said of the influence of the population factor on

TABLE VIII

DISTRIBUTION OF MAXIMA AND MINIMA BY SIZE-OF-ESTABLISHMENT GROUPS

Stores with Sales	Reach the Highest Sales Ratio in Cities with Population	Reach the Lowest Sales Ratio in Cities with Population
Under $15,000	2,500 to 10,000	Over 500,000
$ 15,000 to 30,000	Under 2,500	Over 500,000
30,000 to 60,000	25,000 to 100,000	Over 500,000
60,000 to 90,000	100,000 to 500,000	10,000 to 25,000
90,000 to 120,000	100,000 to 500,000	Under 2,500
120,000 to 180,000	100,000 to 500,000	10,000 to 25,000
180,000 to 300,000	Under 2,500	Over 500,000
300,000 to 1,000,000	100,000 to 500,000	2,500 to 10,000
1,000,000 and over	Over 500,000	25,000 to 100,000 (the smallest city in which such stores are found)

TABLE IX

DISTRIBUTION OF MAXIMA AND MINIMA BY POPULATION GROUPS

Of Stores Located in Cities with Population	The Highest Ratio Is Shown by Stores with Annual Sales	The Lowest Ratio Is Shown by Stores with Annual Sales
Under 2,500	$ 180,000 to $ 300,000	$90,000 to $120,000
2,500 to 10,000	90,000 to 120,000	15,000 to 30,000
10,000 to 25,000	180,000 to 300,000	15,000 to 30,000
25,000 to 100,000	60,000 to 90,000	Under 15,000
100,000 to 500,000	300,000 to 1,000,000	Under 15,000
500,000 and over	1,000,000 and over	Under 15,000

the ratios of the totality of stores located in the same place holds true of the stores when each size of store is treated separately. In all of the rows except the first and the two last, we notice a wavelike distribution of the ratios; they start off at a fairly high level, then rise somewhat more and decline, or decline from the first point on, until the population group of from 25,000 to 100,000 is

reached: this group begins a new movement of the ratio similar to that found in the first part of the table. Thus stores of every size adapt themselves to the needs of the market which they serve. Yet the degree of adaptation is not the same; the smaller stores apparently fit better into the small-town economic conditions, while the larger are more typically urban institutions. This is to be inferred from the fact that for stores with sales up to $30,000 the peak reached by the ratio of small-town stores is higher than that reached by the ratio of stores in the larger cities; while for all but one group of stores with sales in excess of $30,000 the peak reached by the ratio of the larger-city stores is higher than that reached by the ratio of stores of the same size when located in smaller towns. It is this change in the amplitude of fluctuation which accounts for the fact that for the smaller stores the highest ratios are found in the small towns and the lowest ratios in the large cities; while for the fair-sized and large stores the highest ratios are found in the large cities and the lowest ratios in the small towns or the smallest cities in which stores of this size are located. This feature of the table has been brought out in the first summary (Table VIII), which, by concealing the secondary movement of the ratios apparent in the table, singles out for our attention the particular fitness of stores of a certain size to operate under clearly defined conditions.

Credit by Small and Large Stores for Each Population Group. The fluctuations of the ratios in each of the columns of Table VII indicate how the amount of credit varies separately for stores with an increase in their size, when the stores treated are only those located in cities of about the same magnitude. Here, again, it must be said that what has been found true when the distribution of stores by cities of various magnitudes has not been considered still holds true in this analysis, in

which we hold the population factor constant and thus discount its possible influence. In practically all of the population groups, it is the group of largest stores or the one next to it which has the highest ratio, and the group of smallest stores or the one next to it which has the lowest ratio. Again, as in the analysis by size-of-establishment groups, the tendency of the ratio to increase with the size of the store is not so clear-cut as we should wish it to be. The rise of the ratio is often interrupted; particularly, the stores with sales of from $120,000 to $180,000 seem to have inordinately low ratios. In the towns with a population under 25,000 the smallest stores have very high ratios, which is the other side of the closer adaptation of the small stores to small-town requirements; therefore, in those population groups, the ratio first falls with an increase in the size of the store, and rises again only thereafter. Yet, by and large, we must declare the results of our original analysis confirmed. The larger stores are practically everywhere extending more credit than the small stores, since they are more capable of offering this service than are their smaller competitors.

Conclusions. The upshot of this analysis, then, is that, while the larger stores grant more credit than smaller stores, wherever they happen to be located, the larger stores grant more credit when they are located in large cities, while the smaller stores seem more kindly disposed to a small-town and farming clientele. The relation thus discovered between the size of the store and the type of the market to which it is best adapted does not prevent us, however, from declaring the influences of the population factor and the size-of-establishment factor to be independent and distinct. For stores of each given size, we find ratios varying with population in the same way as when all stores are lumped together. Similarly, for stores in each population group, we de-

tect an increase in ratio with the size of the store analogous to the increase discovered when all population groups were treated together. The results of our population and size-of-establishment analyses are thus not modified at all: they are fully substantiated.

E. SUMMARY

The analysis for the period as a whole has yielded some interesting conclusions. We have found the relative amount of credit outstanding to be greatest in the South, somewhat less in New England, still less in the Far West, and least in the Middle West and Middle Atlantic region. The small-town stores were found to have more credit outstanding than the stores in somewhat larger cities; but when the stores were followed from fair-sized to large cities, it was discovered that the amount of credit increases with the growth of the city. The larger stores do a greater part of their business on credit than the smaller stores; and that happens irrespective of where they are located. Yet the smaller stores sell more on credit when they operate in a small town, while the larger stores finance to a greater extent the large-city consumer. The amount of credit granted by a store has apparently little or nothing to do with the amount of borrowing which the store does on its own account; this latter depends more on the proximity of the store to the loan market, since as a rule the stores located in the more economically developed sections of the country, the stores in the larger cities, and the larger stores in general, borrow relatively more than the smaller stores, the stores in backward sections, and those in the smaller towns.

3. Changes from Year to Year

In studying the situation by years, we shall examine first the distribution of the various ratios by groups for each of the years separately. The distribution in each single year will be compared with the distribution for the period 1921–1925 as a whole, as well as with the distribution in the years preceding and succeeding the one in question. For an explanation of changes in their distribution from one year to the next, we shall then refer to the year-to-year movement of the ratios for the groups of stores separately. This analysis will be performed for each of the classifications used in the

preceding part of the study. Inasmuch as the order in which these classifications are taken up is the same as above, we turn first to the classification by geographic divisions.

A. ANALYSIS BY GEOGRAPHIC DIVISIONS

(Tables X–XIV, Charts 7 and 8)

Two Sets of Ratios. It will be recalled that we have two sets of ratios for the groups in the geographic classification: the first based on store years for stores reporting sales, the second based on almost double that number of store years, including those for stores which do not report sales. We shall start with the sales ratio as the most important, and later check its movements by those of the assets ratio based on the larger number of store years. The worth ratio will call for comment only when its fluctuations are strikingly different from those of the assets ratio.

Sales Ratios by States in Each of the Years. In the analysis for the period as a whole, we have found that the ratio is highest for the Southern states and lowest for California and Indiana. When the ratios for the sections of the country are compared in each of the years separately, the general outlines of the picture are found to persist. Thus, Virginia is the state with the highest ratio for three years and second highest for the other two years in the period 1921–1925. For Kentucky, we have ratios only for the years 1922–1925; out of these in each of the years 1922–1924, Kentucky is second to Virginia in the magnitude of the ratio. On the other hand, California is the only state which in each of the years remains below the average for the country. It is followed by Colorado and Indiana, each of which rises but once, and this very slightly, above the average for the country. Thus a certain amount of

TABLE X

RATIOS BY STATES AND YEARS

States	1921	1922	1923	1924	1925
1. Sales Ratio					
California	032	.067	081	064	.062
Colorado	015*	048*	052	102	083
Connecticut	——	——	042	135	129
Indiana	023	.024	035	.072	096
Iowa	098	046	087	.068	.052
Kentucky	——	098	.138	.143	.060
Pennsylvania	068	.124	074	.060	.066
Texas	071	080	072	068	.079
Virginia	101*	104*	170*	164	.116
2. Assets Ratio †					
California	049	206	190	180	135
Colorado	126	242	197	232	.286
Connecticut	160	139	141	192	232
Indiana	109	136	095	145	132
Iowa	187	082	161	.167	141
Kentucky	126	211	232	270	283
Pennsylvania	348	295	142	130	109
Texas	132	198	155	163	177
Virginia	143	220	338	238	194
3. Worth Ratio †					
California	065	.447	211	334	180
Colorado	144	325	.219	254	.422
Connecticut	210	166	218	252	.349
Indiana	178	.156	112	197	.191
Iowa	236	.111	212	.191	.194
Kentucky	203	282	297	.326	344
Pennsylvania	396	368	184	191	.153
Texas	181	239	207	211	245
Virginia	.184	346	454	315	.281

*Ratio based on less than 10 store years.

† Based on total stores.

stability has been found in the position of the states whose ratios are at the extremes of the range, i.e., the highest and the lowest.

Stability of the Yearly Distributions. When we turn, however, to a more careful comparison of the yearly distributions of ratios and follow a method yielding measurable results, our confidence in the stability of the distributions is considerably shaken. In order to test stability, we assign ranks to each of the states for each of the years so that the state with the highest ratio in 1921 gets the rank 1 in this year, the state whose ratio is next in magnitude to the first is accorded the rank 2 in the same year and so on. Then the differences in the ranks of the same states in two successive years are added without regard to sign. This total shifting in ranks is a crude index of the aggregate change that has taken place in the ratios for each of the states relative to the rest of the country. In order to make the measure of total shifting comparable throughout the period covered, we have to utilize in ranking for each of the years ratios for the same number of states. Since we have only seven states for which ratios are available from 1921 on, we shall limit the measurement of stability to these states. The total shifting in ranks for them is as follows:

From 1921 to 1922	12
From 1922 to 1923	12
From 1923 to 1924	17
From 1924 to 1925	7

Until the year 1925 the shifting is quite considerable. For seven states the maximum shifting would be measured by the figure 24, as we can easily convince ourselves by arranging a series of natural numbers from 1 to 7 first in an ascending order, then in a descending order, and summing up the differences between the correspond-

ing numbers without regard to sign. The nearer the total shifting is to this maximum or to zero, the closer is the dependence of the year in question upon the preceding year, this dependence being positive when the shifting is least and negative when it is largest. Viewed from this angle, our total-shifting indices testify to the fact that the situation in 1922 was practically independent of the situation in 1921, the same holding true of the relation between 1923 and 1922. The situation in 1924 is halfway the inverse of that in 1923—that is, roughly speaking, the states with relatively high ratios in 1923 had relatively low ratios in 1924 and *vice versa*. This is interesting, since the year 1924 was probably the first in which the improvement in general business exerted a considerable influence on retail trade. Similarly, the situation in 1925 is fairly dependent upon that in 1924, the states tending to retain in 1925 their 1924 position relative to the rest of the country as measured by credit outstanding.

Decline in Regional Differences. When attention is concentrated upon the absolute magnitude of the ratios in each of the yearly distributions, an interesting tendency is discovered—a diminution in the dispersion of the ratios. While the range of the distribution of the ratios expanded but slightly, the average for the country rose considerably from 1921 to 1925, with the inevitable result that the coefficient of variation, as measured crudely by the ratio of the range to the arithmetic mean, declined on the whole. The results appear still more striking when we use a more refined measure of dispersion, i.e., the ratio of the average deviation to the mean. The measures of variation for the separate years appear in Table XI.

Thus, while the proportion of credit sales has been increasing from 1921 to 1925 for the country as a whole, the differences between the sections of the country have

TABLE XI

DISPERSION OF THE YEARLY DISTRIBUTIONS OF SALES RATIOS BY STATES

Year	Range	Arith. Mean	Ratio of Range to Mean	Ratio of Average Deviation to Mean
1921	.015 to .101	058	1 48	52
1922.	.024 to .124	074	1 35	37
1923	.035 to .170	083	1.63	39
1924.	.060 to .164	098	1 06	35
1925.	.052 to .129	086	96	27

apparently been declining in relative importance. This decline may be merely a reflection of the fact that in periods of depression and of economic disorganization there is much less uniformity in business affairs than in periods of greater prosperity. On the other hand, this greater standardization of credit practices may well be the result of the increased frequency of credit sales, of greater rationality and more system in this department of the retailers' activity consequent upon its growing relative importance. The period of observation is too short to indicate which of these alternative explanations is the more correct one.

Year-to-Year Movement of the Sales Ratios. An examination of the columns in Table X reveals that all of the states but one for which the sales ratios for 1921 are available had in 1925 a ratio higher than the one with which they started. On the whole then, there has been an increase in the amount of credit since 1921. The same can be inferred from the increase in the average of the ratios from 1921 on, as shown in Table XI. How did this amount increase year by year? In 1922, six out of the seven states for which comparison is possible showed increases in the sales ratio, some of them very considerable increases. In 1923, six out of eight states

had their ratios higher than in 1922; of these six, there are four whose ratios had been rising since 1921, the

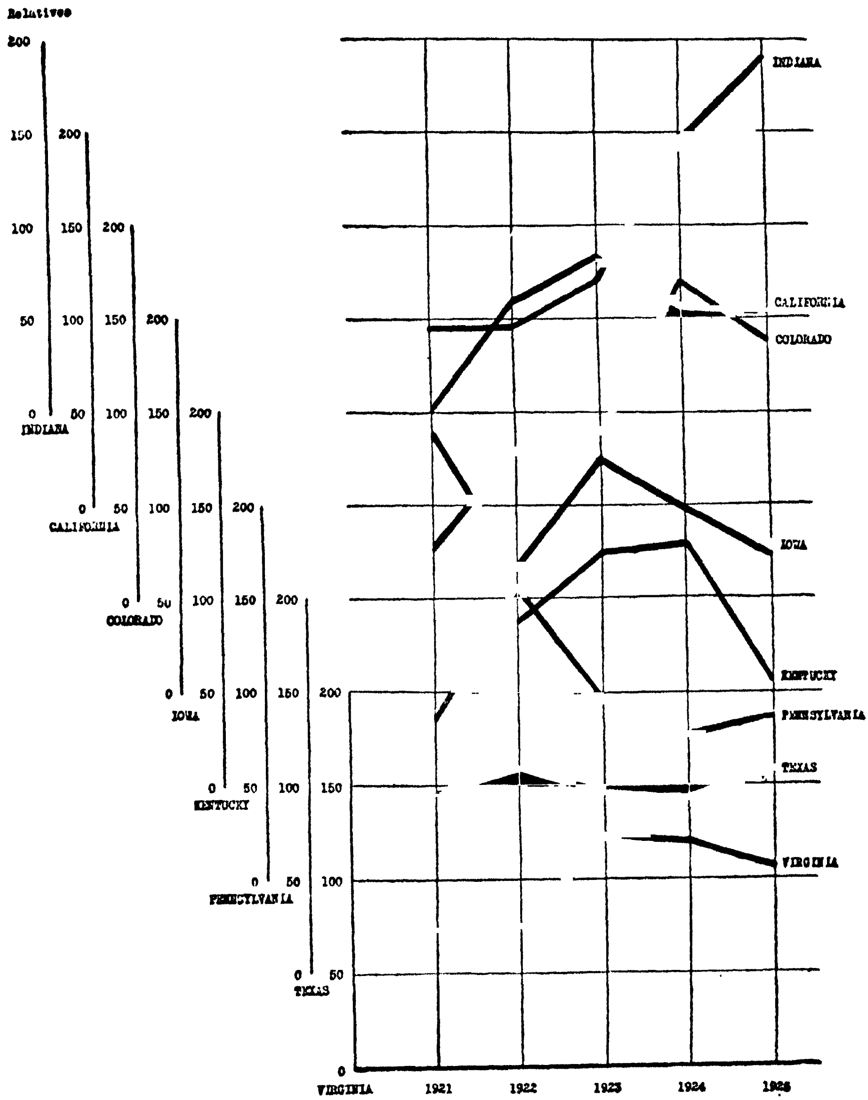


FIG. 7 YEAR-TO-YEAR MOVEMENT OF THE SALES RATIO BY STATES. BASED ON TABLE X

increases for these states being less than those that occurred in the preceding year. In 1924, five out of nine

states had their ratios decline from the 1923 level, the declines being small in practically all the cases. In 1925, six out of nine states had smaller ratios than in 1924, but of these six only three had had their ratios declining since 1923. From this description of the movement, it can readily be inferred that most of the states had their lowest ratios in 1921 and their highest ratios in 1924.

Movements of the Sales Ratios for Individual States. A word or two about the yearly movement of the ratio for states treated individually may be pertinent. The states whose 1921 ratios were the lowest for the country, Indiana and Colorado, have had their ratios continually increasing, Indiana reaching the peak in 1925, and Colorado in 1924. The states at the extremes of the range for the period as a whole, Virginia and California, have analogous year-to-year movements; an increase in the ratio from 1921 to 1923 and a decline from 1923 to 1925. Pennsylvania and Texas showed a similarity in the direction of change of the ratio—a rise from 1921 to 1922, a decline from 1922 to 1924, and a rise again in 1925. Yet while the fluctuations of the Pennsylvania ratios are rather violent, those of the Texas ratio are very small, Texas being the state whose ratio exhibits the greatest stability in year-to-year fluctuations.

Comparison with Secrist's Results for Previous Years. Finally, it is interesting to compare the sales ratios analyzed above with those obtained by Secrist for the preceding periods. In Table XII, we present Secrist's ratios for 1914 and 1919 and our ratios for 1924.

If any inferences from this comparison are valid, the foremost to our mind would be that, during the ten years that have elapsed from 1914 to 1924, the amount of credit granted by retail clothiers to consumers has not shown any definite tendency to increase or to diminish. There were, of course, year-to-year fluctuations

TABLE XII

SALES RATIOS BY GEOGRAPHIC DIVISIONS: 1914, 1919 AND 1924

Geographic Divisions	1914		1919		1924	
	Store Years	Ratio	Store Years	Ratio	Store Years	Ratio
East	24	.077	41	.047	263	.076
South	21	.106	47	.084	173	.106
East North Central	51	.089	89	.066	61	.095
West North Central	60	.074	101	.061	49	.063
West	16	.059	28	.043	89	.070
Total	172	.082	306	.062	635	.083

in the ratios of outstandings to sales, as is evidenced by the ratios for 1919 in this table, and by the results of the analysis presented in the preceding paragraph. These fluctuations, however, are in all likelihood merely reflections of the changes brought about by the war and post-war readjustments. The wave of consumers' buying in 1919 and the abundance of ready cash increased sales and reduced both the proportion of credit sales and the maturities of credit granted. After the war, when prosperity waned and conditions began to resemble the normal ones of previous days, the amount of credit outstanding tended to climb back to the pre-war level.

Assets Ratios by States in Each of the Years. Passing now to an analysis of the assets ratios by states, we must again call attention to the fact that the ratio considered here is based upon a number of store years almost twice as large as that from which the sales ratios have been derived. We are dealing here with a larger sample, and the possible discrepancies in results are to be attributed not only to the difference in the character of

the ratio but also—and perhaps largely—to the difference in the sample.

A superficial examination of the distribution of the assets ratios in each of the years treated separately indicates that Virginia and Kentucky were persistently in the lead as to the magnitude of the assets ratio, never falling below the fourth rank. Indiana, on the other hand, was persistently the state with the lowest ratio; it never rose above the seventh rank and its total shifting in position in the year-to-year comparison is expressed by the lowest number, 3. To compensate for this stability, there was extreme shifting on the part of Pennsylvania, which was the state with the highest ratio in 1921–1922 and with the lowest in 1924 and 1925. Colorado, too, with the seventh rank in 1921, was near the top of the list in the other years.

Stability of the Yearly Distributions of Assets Ratios. It may be said then, that inspection of the ratios with the naked eye reveals little stability in the yearly distribution. We come to a different conclusion when the distributions are examined with the aid of the total-shifting measure. This latter, by helping us to disregard the absolute magnitude of the ratio, brings forward the fact that the distribution of the assets ratios is stable, more stable than that of the sales ratios, and that its stability is continually increasing.

The total shifting for the assets ratios (computed as explained above) is as follows:

From 1921 to 1922	24
From 1922 to 1923	18
From 1923 to 1924	12
From 1924 to 1925	10

Since we are dealing here with nine states, the maximum possible shifting is 40. Viewed in this light, the total shifting indicates that so far as the assets ratio is

concerned, the situation in 1922 is independent of that in 1921; the same holding true of the relation of 1923 to 1922. On the other hand, the 1924 distribution is somewhat similar to that of 1923, and the 1925 distribution resembles still more that of 1924. The increasing stabilization of the yearly distribution of the ratios evidenced by the total shifting brings to mind again the hypothesis about the increasing uniformity of credit practices in clothing stores being due to the increasing frequency and importance of credit sales. This time, however, we shall have to re-word the hypothesis in conformity with the inferences drawn from the comparison with the ratios of Secrist for 1914 and 1919. We shall have to emphasize more strongly the return to the situation which prevailed before the war, to more frequent credit extensions, rather than the introduction of untried credit practices.

Decline in the Relative Importance of Sectional Differences. The increase in uniformity of credit practices as between various sections of the country is reflected in the case of the assets ratios in a decline of the coefficients of variation from 1921 on. The persistence of such a similarity between the distribution of sales ratios and that of assets ratios convinces us of the representative character even of our less numerous sample on which the sales ratios are based, as well as of the fact that the diminution of sectional differences is truly genuine so far as credit extension by clothing stores is concerned. The composition of the coefficients of variation relating to the assets ratios indicates that the diminution of dispersion is even more genuine for assets ratios than it is for sales ratios: it is not so much the increase in the arithmetic mean of ratios used as a divisor as the decrease in the amount of absolute variation as measured by the sum of deviations that produces the decline of

the coefficient. The coefficients of variation and their constituents appear in Table XIII:

TABLE XIII

DISPERSION OF THE YEARLY DISTRIBUTIONS OF ASSETS RATIOS BY STATES

Year	Range	Mean of Ratios	Ratio of Range to Mean	Sum of Deviations	Ratio of Average Deviation to Mean
1921............	.049 to .348	154	1 94	472	34
1922............	.082 to .295	192	1 11	.411	24
1923.........	.095 to .338	.183	1 33	446	27
1924.........	.130 to .238	.191	57	342	20
1925...... ...	.109 to .286	190	93	508	30

Year-to-Year Movements of the Assets Ratios by States. The greater stability of the distribution of assets ratios is reflected in the fact that their year-to-year movements are similar for a number of states. The states may be readily divided into three groups according to the general direction of this movement. The states with rising assets ratios are led by Kentucky, whose ratio has been increasing uninterruptedly and has more than doubled during the five years since 1921; among these states also are Texas, Colorado and Connecticut. The states with persistently declining ratios are Pennsylvania and California (since 1922). The rest of the states have their ratios fluctuating up and down without any apparent trend. In spite of this seeming dissimilarity of movement, all of the states with the exception of Pennsylvania and Iowa have their ratios in 1925 higher than in 1921. Moreover, five states have their lowest ratios in 1921, and two in 1922. A generalization of equal definiteness could not be established regarding the highest ratios, although there are more of such ratios in 1925 than in any other year. In summarizing the movement of the ratios for the country as

a whole, we may guide ourselves by the movement for the majority of the states in each of the years and say

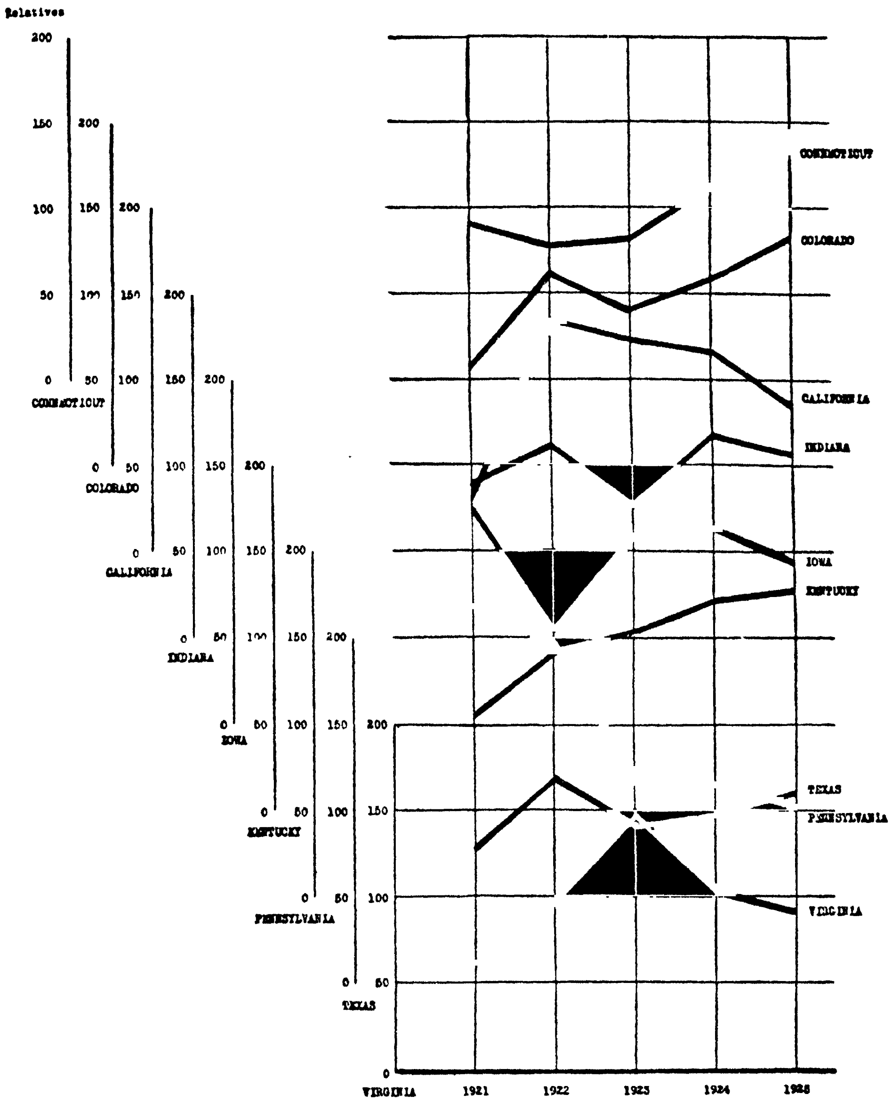


FIG. 8. YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY STATES. BASED ON TABLE X

that the ratios have been moving upward from 1921 to 1922, downward from 1922 to 1923, upward again from 1923 to 1924, and downward from 1924 to 1925.

The Worth Ratios. Little of interest can be said about the distribution of worth ratios in each of the years, or their movement from year to year; in both of these, they follow closely the corresponding assets ratios. Of greater effectiveness is the comparison of the absolute magnitudes of these ratios with those of the assets ratios. By dividing the former by the latter, we obtain the ratio of current assets to current net worth, which indicates the relative amount of borrowing by the groups of stores analyzed. It is important to notice that in most of the cases—particularly so if the states of California, Colorado, and Connecticut are disregarded—an increase in the assets ratio is accompanied by a diminution of the relative amount of borrowing done by the group of stores. This confirms the statement made above that the amount of credit granted by a store apparently does not affect the amount of borrowing resorted to by the store for its own use. Moreover, the concomitance of the two movements described suggests that the increase in the assets ratio is due not so much to an increase in accounts and notes receivable as to a diminution in current assets resulting from a decline in the amount of merchandise on hand. Cutting down on stock carried over from one balance year to the next has produced a decline in accounts and notes payable, most of which represent amounts owed to wholesalers and jobbers from whom merchandise is purchased, and has resulted in an increase of net worth as compared to the amount of current assets.

Ratios by Individual Cities. Not much can be said in this part of the study about the ratios by individual cities. The set of ratios based on store years showing sales has been computed only for the New York City stores, since the number of reports for other cities was too small for use. The set of ratios based on all store years has been computed for all of the individual cities

TABLE XIV

RATIOS BY INDIVIDUAL CITIES AND YEARS

Cities	1921	1922	1923	1924	1925
1. Sales Ratio					
Cleveland	—	—	—	.153	.186
New York	.157*	.011*	.077	.051	.041
2. Assets Ratio†					
Boston	—	.209*	.520	.132	.220
Cleveland	.047*	.052	.017	.249	.353
Kansas City, Mo.	.069*	—	.112	.172	.102
New Orleans . . .	—	—	—	.306*	.278*
New York .	.154	.075	.106	.132	.102
3. Worth Ratio†					
Boston	—	.320*	.800	.154	.320
Cleveland	.052*	.067	.023	.357	.475
Kansas City, Mo. . .	.093*	—	.131	.232	.141
New Orleans	—	—	—	.375*	.323*
New York . .	.185	.102	.127	.188	.142

* Ratio based on less than 10 store years.
† Based on total stores.

except New Orleans. Yet little could be done even with these ratios since, with the single exception of the New York figures, all the other ratios fluctuate in an extremely violent manner, making a comparison of yearly distributions or of year-to-year movements unprofitable, if not impossible. Of the New York ratios, it can be said that both of them show a decline in the relative amount of credit granted from 1921 to 1925, the decline being much more pronounced in the sales ratio than in the assets ratio based on a larger number of store years.

The similar year-to-year movements of the two ratios are: a decline from 1921 to 1922, a rise from 1922 to 1923, and a decline from 1924 to 1925.

B. ANALYSIS BY POPULATION GROUPS
(Table XV, Chart 9)

Sales Ratios in Each of the Years Taken Separately. The relation between the type of market served and the relative amount of credit outstanding that has been found to exist when the period 1921 to 1925 is treated as a whole may also be discovered when an examination is made of the distribution of the sales ratios by population groups in each of the years separately. In the years 1922–1924, the ratio tends to rise as we pass from the lower population groups to the higher. In the years 1921 and 1925, the ratio for the lowest and the highest (or next to highest) population groups exceeds quite considerably the other ratios. The situation in these two years impressed itself upon the average for the five-year period to an extent which called for a lengthy comment above.[1] That the highest population group is distinguished by a relatively high ratio needs no additional explanation here. The point to clear up is why the ratio for the lowest population group is high only for the two extreme years, 1921 and 1925.

Year-to-Year Movements of the Sales Ratios. The key to the puzzle is found in analyzing the year-to-year movement of the ratio for each population group separately. This movement is more or less similar for all of the population groups, except the lowest: a low point in 1921, a rise in 1922 (a fall for the large cities over 100,000) a peak reached in 1923 or 1924 and a slight fall from the 1924 heights in 1925. Thus, it followed relatively accurately the fluctuations in general business conditions. The movement for the population group under

[1] See pp. 64–66.

TABLE XV

RATIOS BY POPULATION GROUPS AND YEARS

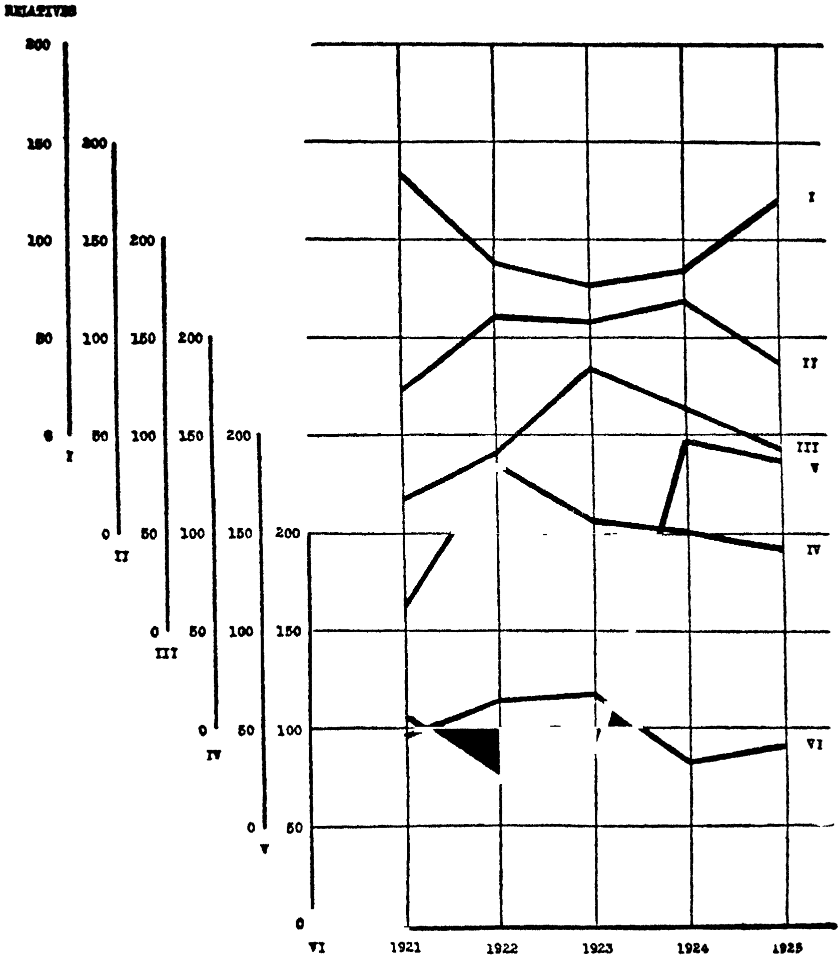
Cities	1921	1922	1923	1924	1925
1. Sales Ratio					
Population under 2,500	.111	.074	.063	.068	.099
Population 2,500 to 10,000	050	.076	.073	.080	.060
Population 10,000 to 25,000	044	.058	.086	.072	059
Population 25,000 to 100,000	.049	105	.081	.077	.072
Population 100,000 to 500,000	039	.016	.028	139	.132
Population 500,000 and over	085	.097	.100	.070	.076
2. Assets Ratio					
Population under 2,500	177	.137	120	.127	.142
Population 2,500 to 10,000	090	117	124	.128	.098
Population 10,000 to 25,000	067	.108	.126	108	.106
Population 25,000 to 100,000	090	206	181	.168	.143
Population 100,000 to 500,000	099	038	.056	.256	.261
Population 500,000 and over	163	.179	228	.171	164
3. Worth Ratio					
Population under 2,500	227	171	156	176	.183
Population 2,500 to 10,000	119	157	.168	173	125
Population 10,000 to 25,000	089	.139	161	136	.135
Population 25,000 to 100,000	113	.219	236	232	209
Population 100,000 to 500,000	122	052	.071	350	.385
Population 500,000 and over	205	.241	286	.263	.253

2,500 was exactly the reverse: the high point occurred in 1921, the fall came in 1922 with the lowest point reached in 1923, and the highest point in 1925. The explanation apparently is that the storekeepers in these very small towns are considerably more affected by the idiosyncrasies of agriculture and its fluctuations than are the others. Another factor in the situation is the

slowness which the small-town storekeeper practises in writing off bad debts: until the debtor is completely bankrupt so that he shifts to a lower social stratum or leaves the locality, the storekeeper still hopes to collect the amount outstanding and keeps it on his books. This would account for the existence of a number of small-town stores in which the receivables exceeded the total sales for the year. It appears then that in 1921 the ratio was high, because the sales were low, and the accounts were high as a result of cumulation for the preceding year and a half. In 1922 and 1923, both the sales and accounts were low, very little credit having been granted by storekeepers who had once "burnt their fingers." In 1924 and 1925, with a general improvement in agricultural conditions and a loosening of credit strings by country banks, the ratio rose.

The Assets Ratios. In discussing assets ratios here, we are dealing with those based on the store years showing sales; those based on the larger number of reports are not available by population groups. The distribution of these ratios in each of the years, as well as their year-to-year movement, presents no significant deviations from those observed in the case of the sales ratios for the same sample. It is more important here to compare the movement of the sales ratio with that of the quotient of the assets ratio over the sales ratio: the latter indicates the relation of sales to current assets. In a majority of the cases, whenever the sales ratio rises, this quotient declines and *vice versa*. Three items are involved in these ratios and quotients: receivables, sales, and current assets. The simplest explanation would be that in which only sales are taken to be variable: this by itself could explain the concomitant movement of the sales ratio and of the sales-to-assets ratio, since the item of sales is involved in both of these ratios. Thus, if sales decline, the sales ratio must, *cæteris paribus*, in-

crease and the sales-to-assets ratio diminish. This explanation, however, does not square with the available



CITIES WITH POPULATION
I Under 2 500
II 2 500 to 10 000
III 10 000 25 000
IV 25 000 100 000
V 100 000 500 000
VI 500 000 and over

FIG. 9. YEAR-TO-YEAR MOVEMENT OF THE SALES RATIOS BY POPULATION GROUPS. BASED ON TABLE XV

information: were it correct, the amount of relative increase in the sales ratio should be approximately equal

to the amount of relative diminution in the sales-to-assets ratio. This does not happen to be the case. We have to turn, then, to the other possible explanation, the assumption of a concomitance of variation between outstandings and current assets, the concomitance being of such a nature that when receivables increase, current assets increase as well, and *vice versa*. This explanation does not, of course, exclude a variation in sales; nay, this latter is practically a part of it. It all reduces itself to a statement that a certain set of conditions, denoted in common parlance as "slack business" or "brisk business," results in simultaneous changes in all of the three items: when slack business prevails, large uncollected balances are piled up, sales are slow, and a large stock on hand is accumulated. Brisk business is accompanied by changes in the opposite direction.

The Worth Ratios. Only a few words need be said with regard to worth ratios, or rather about the relation of current assets to net worth, as measured by the quotient of the worth ratio by the assets ratio. For the first three population groups, this relation remains constant throughout the period under consideration. For cities with a population of 25,000 and over, this relation in 1921 is about the same as for smaller towns; but it increases more or less regularly and is greatest in 1925. This would indicate that for the medium-sized and large cities, an increase in the amount of credit granted by the stores has been paralleled by an increased reliance of the stores upon short-term borrowing. This increase in balances payable cannot be due to overstocking, since the relation of sales to assets for the same population groups is increasing at the same time. It is merely a matter of expanding the business, not entirely by increased investments, but partly by augmented borrowing from the outside.

C. ANALYSIS BY SIZE-OF-ESTABLISHMENT GROUPS
(Tables XVI and XVII, Chart 10)

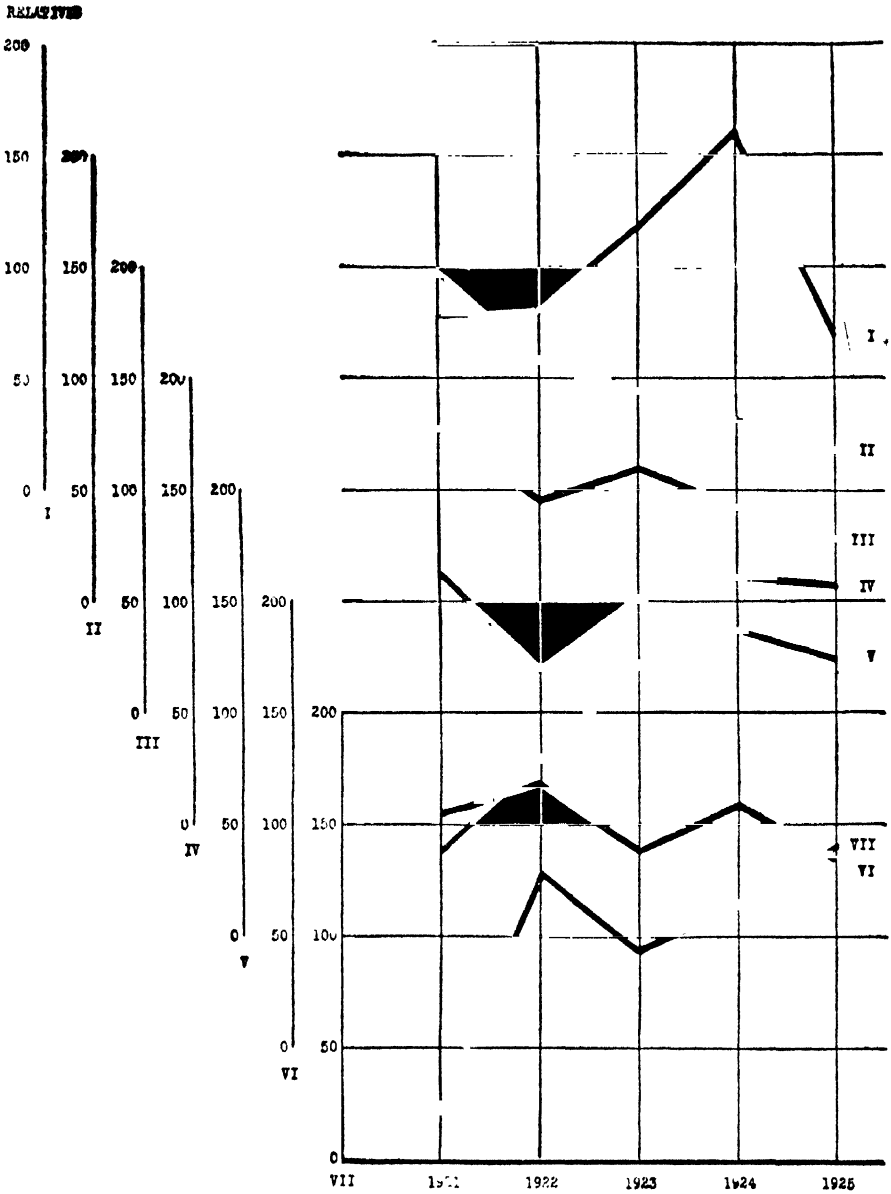
Sales Ratios in Each of the Years Taken Separately. In the survey for the period as a whole, we established a

TABLE XVI

RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS AND YEARS

Stores Reporting Sales	1921	1922	1923	1924	1925
1. Sales Ratio					
Under $15,000	032	032	.047	065	027
$ 15,000 to $ 30,000	092	066	.058	.051	041
30,000 to 60,000	.093	069	078	.067	.057
80,000 to 90,000	.090	.054	079	086	084
90,000 to 120,000	026*	054	084	.092	084
120,000 to 180,000	080*	093*	068	083	.065
180,000 and over	018*	099	072	088	107
2. Assets Ratio					
Under $15,000	.049	033	.044	.095	030
$ 15,000 to $ 30,000	124	107	089	073	.067
30,000 to 60,000	145	110	.110	111	097
60,000 to 90,000	147	091	.138	161	.149
90,000 to 120,000	057*	110	.147	163	.162
120,000 to 180,000	138*	224*	.130	.156	.114
180,000 and over	049*	200	.162	.209	242
3. Worth Ratio					
Under $15,000	.060	.039	.053	120	.039
$ 15,000 to $ 30,000	157	.138	114	.096	.086
30,000 to 60,000	.187	.141	.150	.145	129
60,000 to 90,000	187	.121	.185	228	207
90,000 to 120,000	076*	156	203	228	.226
120,000 to 180,000	.185*	274*	157	210	.195
180,000 and over	060*	238	206	.307	.338

* Ratio based on less than 10 store years.



STORES WITH ANNUAL SALES

I	Under		$	15 000
II	$ 15 000	to		30 000
III	30 000			60 000
IV	60 000			90 000
V	90 000			120 000
VI	120 000			180 000
VII	180 000 and over.			

FIG. 10. YEAR-TO-YEAR MOVEMENT OF THE SALES RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS. BASED ON TABLE XVI

tendency for the sales ratio to rise with the increase in the volume of business done by a store. The tendency was found to be irregular and marred in some cases by disturbing influences. When the analysis by size of store is made for each year separately, the same general tendency for the ratio to rise with an increase in sales is observed. The only exception is furnished by the year 1921, when the ratio for the very large stores was the lowest as compared with those of the rest of the stores. It is difficult to say whether this is due to the superior wisdom of the large stores in refraining from extending credit in times of depression, or to their ability to withstand the pressure of poor business without succumbing to the temptation to bolster up sales by granting easy credit, or finally to an unusual increase in sales stimulated by cut prices and motivated by the necessity of getting rid of the accumulating stock. The comparison of the ratio of accounts to sales with the ratio of accounts to assets seems to show that in 1921 the ratio of sales to current assets for these stores was about one and one-third times greater than in any of the subsequent years. If so, then perhaps the last explanation is the most likely one.

Year-to-Year Movements of the Sales Ratios. Studying now the year-to-year changes in the ratio for the stores of each size group separately, we observe this interesting tendency: ratios for stores with sales under $60,000 have a general tendency to decline from 1921 to 1925; ratios for stores with sales of from $60,000 to $90,000 and of from $120,000 to $180,000 show no definite tendency; while ratios for stores with sales of from $90,000 to $120,000 and of $180,000 and over show a marked tendency to rise from 1921 to 1925. One must not be too rash in generalizing about these trends; they may simply reflect the difference in the policies of stores of various sizes in different phases of the business cycle.

They may merely indicate that small stores extend credit when they are driven to it by lack of business, while larger stores do it as a matter of deliberate policy and hence take account of the degree of risk involved. On the other hand, we cannot refrain from speculating about the processes which these figures may indicate: an increase in prosperity for stores doing a larger relative amount of credit business, and the passing of the priority in credit extension from the smaller neighborhood stores to the larger stores having well-organized credit departments and doing a credit business systematically and rationally.

Comparison with the Results of Secrist. To conclude our analysis of the sales ratio, let us compare it with the sales ratio obtained by Secrist. The points which make comparison not strictly defensible have been made clear above. It remains to be added that the validity of this particular comparison is still further impaired by the fact that the classification of stores by volume of sales used by Secrist is not exactly the same as ours. Still, in a rough way, the juxtaposition of the ratios is illuminating. The figures in the table below for 1914 and 1919 are Secrist's, while those for 1924 are ours:

TABLE XVII

SALES RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS: 1914, 1919 AND 1924

Secrist's Ratios			Our Ratios	
Stores	1914	1919	1924	Stores
Sales under $20,000	.084	——	.065	Sales under $15,000
Sales $ 20,000 to $ 60,000	.077	.052	.067	Sales $ 30,000 to $ 60,000
Sales 60,000 to 80,000	.102	.054	.086	Sales 60,000 to 90,000
Sales 80,000 to 140,000	.110	.064	.086	Sales 90,000 to 150,000
Sales 140,000 to 180,000	.049	.061	.093	Sales 150,000 to 180,000
Sales 180,000 to 300,000	.067	.054	.107	Sales 180,000 to 300,000
Sales 300,000 and over	.057	.073	.085	Sales 300,000 and over

That the ratios for 1919 are lower than those for 1914 and 1924 has been observed also in another connection and has been treated as due to war and post-war disturbances. If we leave this year out of consideration, the movement from 1914 to 1924 seems to indicate a contraction in credit extended by the smaller stores and an expansion in that granted by larger stores. This is similar to the tendency we noticed in the movement of the sales ratio from 1921 to 1925 as set forth in the preceding paragraph. This is another evidence of the fact that consumers' credit in retail trade is becoming respectable, and is being taken up by the larger establishments as a powerful weapon in the competition for the consumers' dollar.

The Assets Ratios. In speaking of the other ratios, it will be convenient for us to keep to the grouping of the classes of stores based on the characteristics of the sales-ratio trends. Thus we notice that the relation of sales to current assets declines slightly from 1921 to 1925 for those groups of stores for which the sales ratio has a marked tendency to increase during the same period. What does this decline indicate? Does it mean a slowing-up in turn-over, or merely an increase in receivables reflected in an increase in current assets? We are inclined to the second explanation, since the decline in the relation of sales to current assets is rather slight, while the increase in the sales ratio is considerable. The situation is entirely different in the case of the smallest stores, where the relation of sales to assets has declined much more considerably and where the sales ratio has declined in the same time; this is clearly a case of slowing down of turn-over.

The Worth Ratios. Turning again to the worth ratio, we find that for those groups of stores for which the sales ratio declines the quotient of current assets by net

worth remains constant; while for the other groups it increases. A comparison of the sales-to-current-assets ratio with this quotient indicates that the increase in the quotient is not due to overstocking, that is, to an abnormally large inventory; for these groups, the sales remain almost constant in relation to current assets. The fact that the increase in the quotient is not large suggests another probable explanation: it is the part of current assets denoted by receivables, the augmentation of which, on the one hand, keeps the sales ratio constant or rising and, on the other hand, produces an increase in the quotient of current assets by net worth. The implication of this explanation is that credit to consumers is financed, at least in part, by borrowing from outside sources, or by slowing down payments to jobbers for merchandise bought.

We can not conclude the worth ratio analysis without noting that it leads to contradictory conclusions. Where the ratios, both for the period as a whole and for separate years, were studied in their geographic distribution, it appeared safe to infer that there is no definite connection between credit granting and short-term borrowing by retail stores. The comparison of the ratios by population and size-of-establishment groups suggests on the other hand that a lax credit-and-collection policy goes together with relatively large short-term obligations. It is obvious that in a study of the ways and means of financing business operations of retail stores, the classifications by the population and size-of-establishment criteria must be recognized as more significant and illuminating than the classification by regions. It should be stated, therefore, that the balance of evidence is in favor of the view that at least a part of the burden of financing the consumer is shifted by the retailer to the wholesaler or banker.

D. SUMMARY

In restating the results of the time analysis, we must mention that this study covers a relatively short period of time and deals with data on an annual basis. These circumstances make it impossible to ascertain the precise significance of the tendencies observed; we are not sure whether they are true secular tendencies or accompaniments of an uncompleted business cycle. From this point of view, the generalizations made could be divided into two groups: the first would include those that have been arrived at by collating Secrist's results with our own, and the second would be limited to those based upon our own data exclusively. Of the first group it can be said that it describes results of the continual operation of long-run factors. The increasing extension of credit by larger stores to offset the diminishing activity of smaller stores in this field, with the result that the relative amount of credit outstanding is the same now as it was before the war, is the description of a process which we should list as a long-run tendency. As opposed to that, we may enumerate such phenomena as the diminution in the relative importance of regional differences; the close dependence of credit-granting in the small towns upon the fortunes of agriculture and in larger cities upon fluctuations in general business conditions; the decline since 1921 in the amount of credit granted by small stores and the increase in that granted by large stores. Of these generalizations, it remains doubtful whether an investigation covering a longer period of time and based upon monthly data would sustain their validity.

Part Two

CREDIT IN RETAIL FURNITURE STORES

1. Introduction

Source of Information and the Selection of Material. The data on which this study is based were obtained from the Lyon Furniture Agency, which is an organization providing commercial-credit information for the benefit of manufacturers and jobbers in the furniture line. For the purpose of this analysis, only retail furniture stores were taken; stores selling furniture and house furnishings were, however, also included. On the other hand, a type quite common in small towns, namely, establishments combining the furniture business with that of providing funeral supplies, was eliminated. Moreover, no account was taken of stores specializing in second-hand or in office furniture. Of course, wherever an indication was found that a store was doing partly a wholesale or jobbing business, it was not included. At the same time, inasmuch as the purpose was to get a composite picture of the situation, no distinction was made between stores doing a straight cash business and those selling mainly on the installment basis.

Geographic Distribution of Stores Covered. The total number of store years analyzed in this study is 4,200. Their distribution by states and individual cities is shown in Table XVIII.

TABLE XVIII

DISTRIBUTION OF STORE YEARS ANALYZED IN THIS STUDY BY STATES AND CITIES

States and Cities	1925	1924	1923	1922	1921	Prior to 1921	Total
California	582	178	66	30	12	3	871
Colorado	48	42	24	2	4	1	121
Connecticut	54	37	28	15	5	1	140
Indiana	130	92	45	18	2	4	291
Iowa	59	65	30	10	2	1	167
Kentucky	61	61	39	16	4	9	190
Pennsylvania	405	275	188	76	25	15	984
Texas	157	120	66	24	7	1	375
Virginia	78	91	78	26	16	13	302
Boston	47	11	7	—	1	1	67
Cleveland	76	33	11	6	—	—	126
Kansas City, Mo.	23	16	17	7	2	—	65
New Orleans	6	12	2	2	2	—	24
New York	205	149	55	38	13	17	477
Total	1931	1182	656	270	95	66	4200

The store years tend to concentrate in 1924 and 1925; this could hardly be avoided in a study like ours in which the number of store years utilized is of supreme importance. The same consideration is a sufficient justification for the fact that the store years for New York City are about two-thirds of the total number of store years for the five individual cities. Of this large weight assigned to New York City we shall take due account at certain points in our analysis.

Distribution of Stores by Population Groups. The store years were classified by population groups (i.e., according to the size of the town in which they were found) as in the analysis of clothing stores; their distribution is presented in Table XIX.

The number of store years for cities of 500,000 and over is more than double that in any other population

TABLE XIX

DISTRIBUTION OF STORE YEARS BY POPULATION GROUPS

Cities	1925	1924	1923	1922	1921	Prior to 1921	Total
Population under 2,500	254	233	163	42	23	18	733
Population 2,500 to 10,000	298	201	110	46	12	7	674
Population 10,000 to 25,000	189	119	71	27	9	4	419
Population 25,000 to 100,000	215	128	73	34	9	11	470
Population 100,000 to 500,000	208	145	89	37	9	6	494
Population 500,000 and over	767	356	150	84	33	20	1410

group. This is accounted for partly by the fact that New York City furnishes a third of the total number of store years in this group.

Distribution of Stores According to Size. In classifying stores by the volume of business done, we were compelled to resort in this study to the current-assets criterion rather than to sales, as was done before. The grounds for this will be made abundantly clear when the reasons for preferring the assets ratio to the sales ratio in this study are stated. The fact that the stores were classified by the amount of current assets has certain important consequences in the study of the variation of the ratios, as we pass from the smaller to the larger stores. The nature of these consequences will be pointed out later. The distribution of store years by the amount of current assets appears in Table XX.

The number of store years in these groups rises until we reach the fair-sized stores, and falls as we pass to the large and very large stores. In other words, the frequency distribution of the store years is a more or less normal one and is indicative of the fact that the class limits have been properly selected.

Selection of Base to Which to Relate Receivables. The information obtained from the Lyon Agency specified

TABLE XX

DISTRIBUTION OF STORE YEARS ACCORDING TO CURRENT ASSETS

Stores	1925	1924	1923	1922	1921	Prior to 1921	Total
Current assets under $5,000	240	138	80	30	5	5	498
Current assets $ 5,000 to $ 10,000	292	176	104	47	22	12	653
Current assets 10,000 to 20,000	407	243	163	63	23	23	922
Current assets 20,000 to 50,000	499	296	176	77	25	16	1080
Current assets 50,000 to 100,000	255	177	76	30	13	7	558
Current assets 100,000 to 250,000	158	98	38	17	5	1	317
Current assets 250,000 to 1,000,000	68	46	16	5	1	2	138
Current assets 1,000,000 and over	22	8	3	1	—	—	34

the amount of sales for only about one-half of the cases; to be exact, for 1,911 out of 4,200 units. This number in itself is large enough to warrant a detailed analysis of the ratios of outstandings to sales, as in the case of clothing stores. The difficulty, however, is that two-thirds (1,454) of the store years for which sales were given fall in the years 1924 and 1925, making impossible a study of the year-to-year movement in the sales ratio, a fact which is of prime importance in this survey. Thus for our purposes it has been practically imperative to use all the store years available and to use current assets as a base to which receivables are to be related for the sake of making their amount comparable by various groups of stores. For the same reason we used the current-assets criterion rather than the sales criterion in classifying store years by volume of business done. Were sales to be used, the number of items in all groups for the years previous to 1924 would be too small to justify conclusions of any importance.

Outline of the Exposition. In presenting the results of this study we are following the general outline of exposition used in the clothing-store analysis. We treat

first the period as a whole, and discuss the credit policies of various types of stores without reference to the particular year in which the stores function. After that, we present the results for each of the years separately. In the first part of this time analysis, we consider the situation in each single year in the same fashion as that in which we investigated the situation for the period as a whole. This leads us naturally to an analysis of the year-to-year changes in the credit policies of stores. With the generalizations regarding annual changes, the presentation is brought to a close.

Comparison with the Clothing Study. In the case of furniture stores, there is no previous study with which a comparison could be made. We are thus deprived of a valuable test of the reliability of the raw material analyzed. Nevertheless, some comfort can be drawn from the fact that plausible similarities and dissimilarities are to be found between the results of the furniture study and those obtained previously in the clothing-store analysis.

2. The Period as a Whole

(Tables XXI–XXIII, Charts 11–14)

A. ANALYSIS BY GEOGRAPHIC DIVISIONS

Assets Ratios by States. In examining the distribution of these ratios, we are struck first of all by the narrow range within which most of them fall. If we disregard the states with the lowest ratios (California and Colorado) and with the highest ratio (Virginia), which are far removed from the rest of the states, the remaining ratios will all be included within the limits of .390 to .427. The significance of this feature becomes obvious when we observe that while it is not as yet a char-

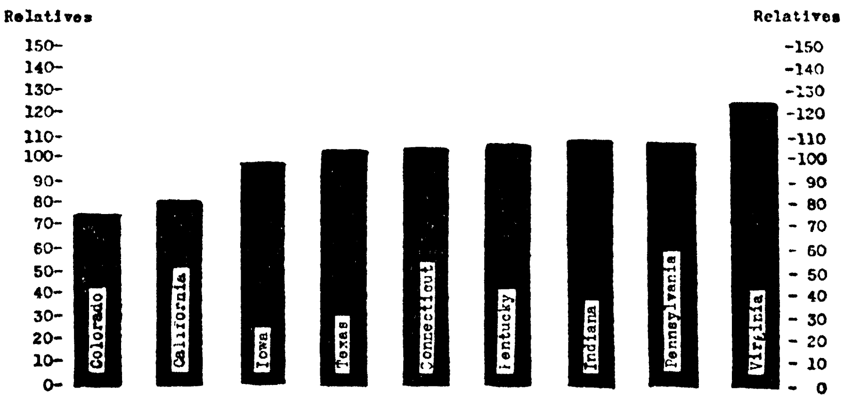


FIG. 11. ASSETS RATIO RELATIVES BY STATES BASED ON TABLE XXI

acteristic of the assets-ratio distribution for clothing stores, the tendency discovered above[1] seems to point to a very much smaller dispersion of the ratios as the goal of the current development in the clothing trade. If the standardization of credit practices throughout the country is correlative with the acceptance of sales on credit as an important and more or less permanent method of merchandising, this difference between furniture and clothing is sufficiently explained. It is a

[1] See p. 81.

TABLE XXI

DISTRIBUTION OF RATIOS BY VARIOUS GROUPS OF STORES FOR THE PERIOD AS A WHOLE

	Assets Ratio	Worth Ratio
States and individual cities:		
California	327	.470
Colorado	.308	.448
Connecticut	.418	.556
Indiana	427	.549
Iowa	390	.490
Kentucky	425	.553
Pennsylvania	427	.633
Texas	412	550
Virginia	.499	.773
Boston	385	567
Cleveland	594	732
Kansas City	520	652
New Orleans	718	980
New York	302	573
Population groups: cities:		
Population under 2,500	295	396
Population 2,500 to 10,000	339	449
Population 10,000 to 25,000	466	.590
Population 25,000 to 100,000	418	.594
Population 100,000 to 500,000	483	752
Population 500,000 and over	341	.568
Size-of-establishment groups:		
Stores with current assets under $5,000	.227	.278
Stores with current assets $ 5,000 to $ 10,000	259	330
Stores with current assets 10,000 to 20,000	297	.390
Stores with current assets 20,000 to 50,000	365	.485
Stores with current assets 50,000 to 100,000	.418	575
Stores with current assets 100,000 to 250,000	479	.683
Stores with current assets 250,000 to 1,000,000	.481	678
Stores with current assets 1,000,000 and over	308	564

matter of common knowledge that furniture has been for a long time very largely sold on time; therefore the absence at the present time of large differences in this respect among various sections of the country is nothing to cause surprise.

In the discussion above we have, however, disregarded the states at the extremes of the range of distribution. At least with regard to those states it can be said that sectional differences in the furniture trade tend to run along the same lines as the differences discovered in the clothing study. There, too, we found Virginia to have the highest sales and assets ratios, and the Far Western states at wellnigh the bottom of the list. The persistence of these regional peculiarities leads us to believe in the existence of important differences in the economic conditions of these regions, producing, through the adaptation of the retailer to the demands made upon him, differences in the credit policies of stores as reflected in the magnitude of their ratios.

Assets Ratios by Individual Cities. The spread between the ratios for the cities is much wider than that found for the states. This can, however, scarcely be taken to invalidate the generalization stated above. The number of store years for each of the individual cities (except New York) is much less than for the average state. Moreover, cities on the whole are divisions not comparable in breadth to the states; the influence of peculiarly local factors is likely to be much stronger and the effect of unrepresentative stores upon the ratio for the total more pronounced. Nevertheless, even this distribution possesses a certain regularity. In conformity with what we learned heretofore about the South, we find New Orleans to be the city with the highest ratio; the fact that New York and Boston have the smallest ratios was equally to be expected. "Watch Cleveland," the reader was admonished in the clothing study; this warning was not in vain. The ratio for Cleveland is next in magnitude to that for New Orleans; this is significant in view of the fact that Cleveland is the most typical industrial city of the five, and because

Cleveland clothing stores had an equally high ratio. Somewhat surprising is the ratio for Kansas City; we find it higher than we should have anticipated, judging by its clothing stores. It will have to be left under a question mark for the time being.

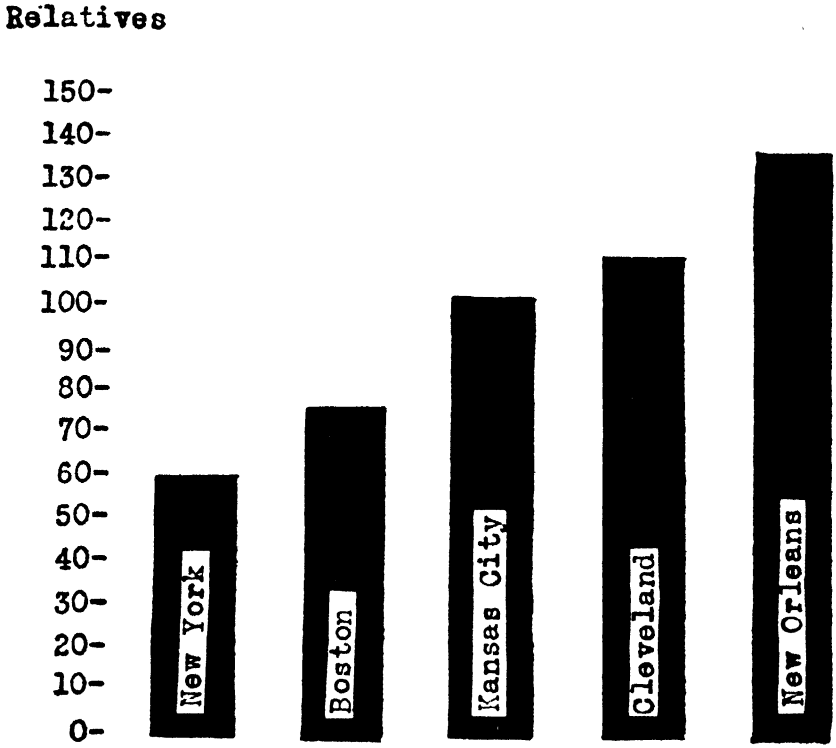


FIG. 12. ASSETS RATIO RELATIVES BY INDIVIDUAL CITIES. BASED ON TABLE XXI

The Worth Ratios. The points in which the distribution of the worth ratios is significantly different from that of the assets ratios can be learned more easily if the quotients of the worth ratios by the corresponding assets ratios are computed. As stated on several occasions before, these quotients have also a meaning all of their own: they show the ratio of current assets to net worth. It appears that for California, Colorado, Pennsylvania and Virginia, these quotients are within

the limits of 1.44 to 1.60; while for the rest of the states they are within the limits of 1.25 to 1.35. We must admit that we lack an explanation for the peculiar grouping of states in this respect. Were Pennsylvania excluded from the group of high quotients, we might have imputed the magnitude of these quotients to the exceptionally large or small magnitude of the assets ratios; but, as it is now, we cannot resort to this explanation, whatever its truth. Moreover, the hypothesis of economically advanced vs. backward states utilized in the clothing study for this purpose is not of much use here.

More comfort is to be found in the analysis of these quotients for individual cities. It appears that New York furniture stores depend more than others upon funds from the outside in order to carry on their operations; the ratio of current assets to net worth for New York City is 1.9. Boston follows in the train of New York. The quotient for New Orleans is still less. Cleveland and Kansas City stores have the lowest quotients. A comparison of the distribution of these quotients with that of the assets ratios lends verisimilitude to the inference suggested by the geographic analysis of clothing stores and rejected later on the basis of the population and size-of-establishment analyses. The hypothesis referred to is that the amount of borrowing by a store is not connected with the amount of credit which it grants to its customers: it remains to be seen how we shall fare with this hypothesis in the following parts of this survey of furniture stores.

B. ANALYSIS BY POPULATION GROUPS

Assets Ratios by Population Groups. A superficial examination of the assets ratio reveals that it is lowest for the cities with a population under 2,500; that it rises regularly as we pass to larger cities; that it reaches

its peak in the cities with a population of from 100,000 to 500,000; and that it is lower again for cities with a population of 500,000 and over. This seems to be quite different from the picture presented by a similar analysis of the clothing stores. There, the smallest and the largest cities had the highest ratios.

Credit by Furniture Stores in Small Country Towns. The difference with regard to the smallest cities is easily

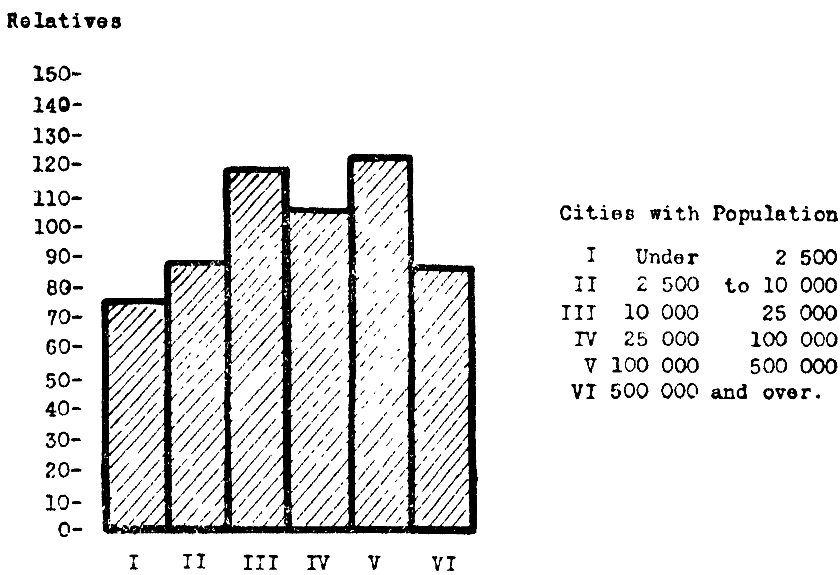


FIG. 13. ASSETS RATIO RELATIVES BY POPULATION GROUPS. BASED ON TABLE XXI

explained. In the first place, by excluding establishments representing a combination of the furniture store and the funeral parlor, we have probably eliminated a large percentage of genuine small-town furniture stores. In the second place, furniture differs from clothing from the consumer's viewpoint: its purchase involves a greater expenditure and it is replaced at less frequent intervals. The farmer is not likely to buy much furniture from stores located in the small towns of his vicinity; it is an investment planned long in advance and warranting the taking of particular pains, such as those involved

in a trip to a larger city. It is probable that the stores which in our analysis fall in the lowest population group are mainly house-furnishing stores selling also small articles of furniture, dealing primarily with the population of small towns and having little open-country patronage.

Credit Policy of the Furniture Stores in the Largest Cities. To account for the low ratio in the largest cities is not so easy. We might however refer to two factors: the probable prevalence of cash sales in cities with a fluid population, and the likelihood that large stocks are carried in the city stores in order to serve a clientele with more fastidious and fluctuating tastes. Again, it might be pertinently observed that the store years for New York and Boston (the ratios for which are low, as we learned from the individual-cities analysis) account for over one-third of the total number in the group for the largest cities. Among other cities in this group are those located in Pennsylvania and California, for none of which the ratio is likely to be high, if the larger cities follow faithfully the regional characteristics discussed in the state analysis. On the other hand, this group does not include a single Southern city which might serve as an offsetting influence. The low ratio, then, may be due, not to the peculiarities inherent in the nature of large cities as retail markets, but to the lopsidedness of our sample.

The Worth Ratios. The variation of the worth ratios by population groups is even more regular than that of the assets ratios; their rise is uninterrupted as we pass from smaller towns to larger cities, until the very large cities are reached. An examination of the quotients of the worth ratios by the corresponding assets ratios would disclose the reason why the regularity of increase is so great. It appears that these quotients increase as well with the size of the city, that is, the proportion

of current assets representing amounts owed in the form of accounts and notes payable grows as we pass from stores located in small towns to stores in larger cities. This is quite in accord with the hypothesis advanced elsewhere about the close dependence of the relative magnitude of funds borrowed by a retail store upon the degree of industrialization of the locality in which it operates.

C. ANALYSIS BY SIZE-OF-ESTABLISHMENT GROUPS

Comparison with the Clothing Study. For furniture stores, the analysis by size of establishment differs in two essential points from the similar analysis carried out for clothing stores. The first of these is with respect to the fundamental ratio used as a measure of the amount of credit granted: the assets ratio and not the sales ratio is used in this important function. The reason why this fact is stressed here is obvious: the assets ratio depends, not only upon the magnitude of the uncollected residue of credit granted, but also upon the rapidity of turn-over as reflected in the relation of stock on hand to sales. This second factor is likely to vary with the size of the establishment. This is a matter of common knowledge, and in our study has been established for clothing stores. The question arises, then, as to how reliable the assets ratio is as a measure of the amount of credit extended.

One would be more inclined to give a positive answer to this question after one's attention had been directed to the second of the differences between this analysis and that in the clothing study. As a criterion of size, we are using here not annual sales, but current assets. While an increase in sales usually results in an increase in current assets, an increase in current assets does not necessarily signify a previous expansion in sales. We could perhaps say that most of the stores with annual

sales from *a* to *b* when classified by current assets will fall in the group with class limits ½ *a* to ½ *b;* but on this basis we could not assert that most of the stores in the assets group ½ *a* to ½ *b* enjoy annual sales of from *a* to *b*. To make this proposition relevant we need only restate it. If it is true that a statistically representative rate of turn-over may be discovered for each of the groups by annual sales, it is not true that the same stores when classified by current assets will form groups for which equally representative and equally distinct rates

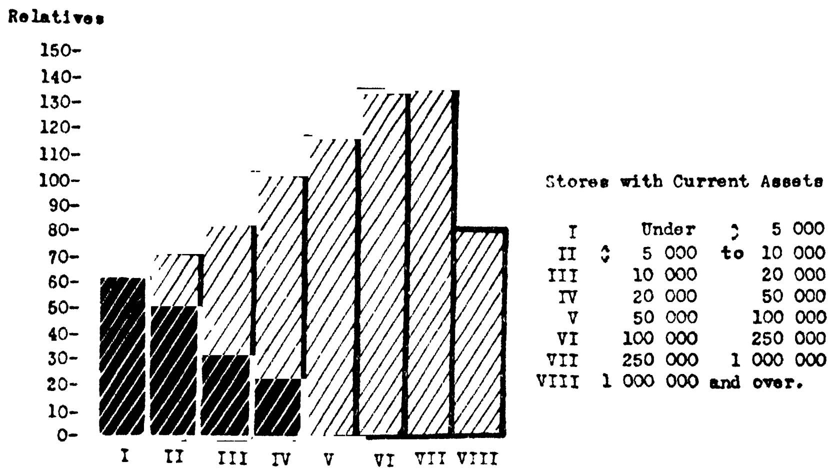


FIG. 14. ASSETS RATIO RELATIVES BY SIZE-OF-ESTABLISHMENT GROUPS. BASED ON TABLE XXI

of turn-over can be found. Thus the difference in turn-over between the lowest and the highest groups by size of establishment should be less when the current-assets criterion is used than when the annual-sales criterion is employed. The fact, then, that we resorted to a classification by current assets increases somewhat the reliability of the assets ratio as an index of credit practices.

Assets Ratios by Size-of-Establishment Groups. Turning now to an examination of the variation in the assets ratio, we find that it increases continuously with the

size of the store and reaches its peak for stores with current assets of from $250,000 to $1,000,000. For stores of a larger size, the ratio slumps off, so that for the very large stores it is about the same as for stores with assets of from $10,000 to $20,000. To explain this break in the rise of the ratios, one might consider two factors. First, over one-half of the very large stores (19 out of 34), and probably the largest ones, are located in cities with a population of 500,000 and over. The population factor is likely to lower the ratio of the stores. It is interesting to note in this connection that the assets ratio for these very large stores is .425 when they are located in cities with a population of from 100,000 to 500,000; and .286 when they are located in cities with a population of 500,000 and over. Second, when receivables become relatively large as compared to the rest of the current assets, the assets ratio increases very slowly with a further rise in receivables. This is a peculiarity inherent in the assets ratio; it calls for a more detailed elucidation.

The Assets Ratio Contrasted with the Sales Ratio. While the sales ratio has no conceivable upper limit, the assets ratio obviously cannot exceed unity. The greater the magnitude of these ratios, the more diverse are the conditions which equal sales and assets ratios are to be taken to reflect. If we assume that current assets are composed only of receivables and of merchandise on hand, and if we further assume a uniform turn-over of two and one-half for all furniture stores,[1] the significance of the assets ratio in terms of the sales ratio appears as deduced in Table XXII.

A low assets ratio is considerably larger than the sales ratio which would reflect the same situation. Thus, if our assumptions are correct, a sales ratio of

[1] This figure is an estimate based upon the comparison of sales with current assets, the information being derived from the working sheets used in this study.

TABLE XXII

COMPARISON OF ASSETS RATIOS WITH EQUIVALENT SALES RATIOS

Assets Ratio	Deduced Ratio of Receivables to Merchandise on Hand	Sales Ratio If Turn-Over Equals 2½	Quotient of Sales Ratio by Assets Ratio	Increase in Sales Ratio Corresponding to .1 Increase in Assets Ratio
.1	111	044	44	
.2	250	100	50	.06
.3	429	172	57	.07
.4	667	.267	67	.10
.5	1 000	400	80	13
.6	1 500	600	1 00	20
.7	2 333	933	1 33	33
8	4 000	1 600	2 00	67
9	9 000	3 600	4 00	2 00

only .1 would correspond to an assets ratio of .2. Nevertheless, as we go up to higher points, the discrepancy between these two ratios first lessens, then vanishes, and finally reverses itself, so that a high assets ratio is indicative of a condition which would produce a sales ratio in excess of unity. Thus when the assets ratio reaches .4, the rate of increase of the sales ratio (last column) becomes equal to that of the assets ratio; after that point the sales ratio would still for a while be less than the assets ratio corresponding to it, but it would be continually gaining ground. At .6 the two ratios are equal. The slightest increase in an assets ratio which is greater than .6 results in an increase of more than twice as much in the derived sales ratio. It is as if a large assets ratio can increase only under tremendous pressure, while the sales ratio is inflated with much less resistance, since it has no logical limit at the boundary between the value of a proper fraction and unity.

Of course, a high assets ratio might be accompanied

by a turn-over greater than the assumed average turn-over. If this happened, the sales ratio would not increase quite so rapidly. Yet it is difficult to imagine that the turn-over could increase as much as is necessary in order to keep the sales ratio within reasonable distance of the assets ratio. Thus, the turn-over would have to be increased from 2.50 to 3.33 and later to 5 in order to have the sales ratio equal to the assets ratio when this latter rises from .6, first to .7, and then to .8.

Significance of the Assets Ratio of the Next to the Highest Size-of-Establishment Group. The bearing of this discussion on the falling-off of the assets ratio, as we pass from stores with current assets under one million to the very large stores, is obvious. Stores with assets of from $250,000 to $1,000,000 have an assets ratio of .481, to which a sales ratio of .371 would correspond on the basis of the assumptions stated above. Now, if we take into consideration the average length of credit terms granted in the retail selling of furniture, we shall be able to estimate what percentage of sales is to be made on credit in order to bring the sales ratio up to .371. From the Furniture Record investigation carried on in 1924, it would appear that the average length of maturity, lumping charge and instalment sales together, is ten months. This would indicate that with a sales ratio of .371, from 76 to 90 per cent of the total sales are made on time.[1] It is inconceivable that the per-

[1] The lower limit, 76 per cent, is deduced as follows: The sales ratio would have been at the end of the year:

were all sales made on 10 months credit. 9/12
were a 10 per cent down payment required. . . . . . . 9/12 − 9/120
were half of the balances repaid after 5 months. . 9/12 − 9/120 − 9/48 or .4875

The ratio of .371 to .4875 is .76. The reasonableness of the last assumption cannot be contested. The amounts trusted on charge accounts are so large and the date of final repayment is so far removed that the furniture dealers must request at least partial repayment at frequent intervals in order to be sure of clearing up the account in ten months. It is no exaggeration then to say that they receive one-half of the balances in five months.

The upper limit, 90 per cent. is estimated on the assumption that all sales are made

centage of credit sales should be larger than this in furniture stores, in which, among other things, many single pieces of furniture and many articles of house furnishings, etc., of rather small value are sold. Thus the realistic significance of an assets ratio of .481 accounts partially for the fact that it remains the maximum ratio reached, that is, for the fact that the assets ratio declines as we pass to the very large stores, whereas, on the basis of generalizations made earlier, we should expect it to rise.

Worth Ratios. More light is shed upon the peculiarity of the group of largest stores when the distribution of the worth ratios is carefully scrutinized. On the whole, these ratios, too, increase with the size of the establishment. They rise until the group of stores with current assets of from $250,000 to $1,000,000 is reached; after that the ratio falls, at first slightly, and then in a manner reminiscent of the assets ratio. The only difference between the two ratios is that the worth ratios begin to fall off even before we come to the group of the very largest stores. This is also reflected in a slight irregularity of the rise of the quotient of the worth ratio over the assets ratio. This quotient is:

Stores with	*Quotient*
current assets under $5,000	1.22
current assets $ 5,000 to $ 10,000	1.24
current assets 10,000 to 20,000	1.31
current assets 20,000 to 50,000	1.33
current assets 50,000 to 100,000	1.38
current assets 100,000 to 250,000	1.43
current assets 250,000 to 1,000,000	1.41
current assets 1,000,000 and over	1.83

on instalment; the formula given in Vol. I, p. 288, is utilized. Were all sales made on credit, the ratio of average outstandings to total sales would have been (10 − 1) ÷ 24; our sales ratio of .371 is about .81 of the value of this fraction. Allowing for a down payment of 10 per cent, and thus treating .81 as equal to .9 of total credit sales, we obtain the figure .9 or 90 per cent.

The interruption in the rise of the quotient is so small as to be deprived of any particular significance. It certainly does not invalidate our thesis about the greater dependence of the larger stores upon financial support derived from sources which have no proprietary relations with the business. The really interesting feature about these quotients is their abrupt rise as we pass to the largest group of stores—a rise which is very much in contrast with the placidity apparent throughout the rest of the series. It suggests that current assets were perhaps abnormally large as compared with the proprietorship; since the receivables were apparently less than we might have expected them to be (as is obvious from the fact that were the assets ratio of .308 multiplied by 1.83/1.41 it would still be less than .481), the extraordinary situation with regard to current assets must have been due to overstocking, to disproportionately large amounts of merchandise on hand, which, to complete the story, were largely not paid for. Since there are only 34 store years in this group, of which 22 are for the year 1925, we could scarcely consider the ratios for it reliable as a basis for general statements regarding very large furniture stores.

D. CONCOMITANT EFFECTS OF THE SIZE-OF-ESTABLISHMENT AND POPULATION FACTORS

Introductory Note. Before concluding the survey for the period as a whole, we must investigate the relation between the size-of-establishment and the population factors so far as their bearing upon the credit policies of retail furniture stores is concerned. The resemblance between the dependence of the amount of credit upon the population of the city and its dependence upon the size of the store is even more striking here than it is for clothing stores. The amount of credit increases both with the population and with the size of the store, this

increase reversing itself when the highest groups in both classifications are reached. In order to isolate the influence of one factor from that of the other, we classify our store years by both of these criteria at once and thus obtain the assets ratios as they appear in the first part of Table XXIII.

Credit Policy of Stores Classified by Size as Affected by Location. When the rows in the first part of Table XXIII are followed, we observe the variation of the ratio with the shifting of a store from a smaller to a larger population center, while the store itself does not grow beyond certain limits. We find then that, with the exception of the smallest stores (the first row), all stores, independent of size, have their ratios rise more or less regularly as they move from the lower population groups into the higher; the ratios are as a rule highest for stores in cities with a population of from 100,000 to 500,000. This does not differ materially from our findings in the population-group analysis, in which the size of the store was disregarded. The only discrepancy is presented by the group of stores with assets under $5,000, whose ratio is highest when they are located in towns with a population under 2,500. This is the only reflection of the adaptation of smaller stores to small-town conditions and of the larger stores to more intensely urban environments, to which we called attention in the clothing study.

Credit by Stores Classified by Location as Affected by the Size-of-Establishment Factor. Variations of the assets ratios by size of establishment within each of the population groups separately can be observed when the columns of Table XXIII are inspected. We find that in cities of every type, except the smallest towns, the assets ratio increases with the size of the store, and is highest for stores with current assets of from $100,000 to $250,000. The situation observed is about the same

TABLE XXIII

ASSETS RATIOS BY SIZE-OF-ESTABLISHMENT AND POPULATION GROUPS

Stores	Cities with Population					
	Under 2,500	2,500–10,000	10,000–25,000	25,000–100,000	100,000–500,000	500,000 and Over
1. Assets Ratio						
Current assets under $5,000	377	.225	217	240	246	.164
$ 5,000 to $ 10,000	211	249	297	322	570	181
10,000 to 20,000	247	.264	383	359	371	.285
20,000 to 50,000	319	322	.443	419	465	.344
50,000 to 100,000	311	.351	400	500	543	420
100,000 to 250,000	.302	381	508	505	561	491
250,000 to 1,000,000	——	——	.500	426	557	479
1,000,000 and over	——	——	——	——	425	.286
2. Ratios Divided by Average for Population Group						
Current assets under $5,000	128	75	55	61	53	50
$ 5,000 to $ 10,000	72	83	76	81	122	55
10,000 to 20,000	84	88	98	91	79	86
20,000 to 50,000	108	108	113	106	100	104
50,000 to 100,000	105	117	102	126	116	127
100,000 to 250,000	102	127	130	128	120	148
250,000 to 1,000,000	——	——	128	108	119	145
1,000,000 and over	——	——	——	——	91	86

as that detected in the size-of-establishment analysis, in which the location of stores was disregarded. The only difference is presented by the towns with a population under 2,500, in which the distribution of ratios by size of store is irregular; the smallest stores having, however, the highest ratio. This is not surprising, being only the obverse side of the better adaptation of the smaller stores to rural conditions.

Adaptation of Small and Large Stores to Markets of a Particular Type. A more careful analysis of these ratios reveals the fact that the complete acclimatization of certain types of stores in particular environments is not limited to the very small stores. We want now to compare the relative importance of stores classified by size in the retail credit sphere of small and large cities. In order to do so, we have to put the cities of various magnitudes on a par, that is, to eliminate the effects of the fact that, as a rule, in larger cities more credit is extended than in smaller cities. We accomplish this somewhat clumsily by dividing the ratios in each of the columns of the first part of Table XXIII by the average of the ratios in the column. We thus obtain columns of percentage deviations which, when followed in rows, tell us how important a group of stores of a certain size is in each of the population groups as compared to the rest of the stores in the same population group. These percentage deviations are presented in the second part of Table XXIII. Making allowances for irregularities, we can divide the second part of this table into four quadrants, the lines of partition running on the population side between cities with a population under and over 25,000, and on the size-of-store side between stores with current assets under and over $50,000. For smaller stores, we find the percentage deviations to be greater for smaller towns; while for the larger stores, the percentage deviations are larger for the larger cities. Thus we may say that the liberality of larger stores in granting credit as compared with the smaller stores is greater in large cities than it is in smaller population centers. This is a phenomenon analogous to that discovered for clothing stores. It strengthens our belief in the existence of a relation of particular fitness between stores of a certain size and definite conditions of operation, however obscured and

overlaid with crisscrossing influences the manifestation of this relationship may be in some cases

E. SUMMARY

Before passing to the analysis by years, it may be advisable to restate our findings for the period as a whole. The differences between the regions of the United States as to the relative amount of credit extended we have discovered to be about the same as for clothing stores, with the Southeast being most liberal in credit granting and the Far West least. Yet so far as the rest of the country is concerned, we found that conditions are practically uniform, a situation which we imputed to the fact that, in the furniture trade, credit to customers is a long established policy tried out by experience, with national standards adopted everywhere, except where the influence of local or provincial factors is such as to militate against this with a strength sufficient to bring about a modification of these standards. If we may judge by the ratios, the stores in larger cities are as a rule extending relatively more credit than those in smaller towns; the stores in the very large cities with a population of over 500,000 seem to offer an exception to this generalization, but for aught we know the peculiarity of this group may be due to the defectiveness of our sample. This tendency to an increase in credit extension with the growth of the city is still more firmly established when stores are segregated by size, and for all stores except the smallest the same tendency is observed. Again, there seems to be reliable evidence to the effect that larger stores extend more credit than smaller stores, the situation being similar to that which has been inferred regarding clothing stores. The deviation of the very large stores from this rule has a number of explanations, not the least important of which may be described as

the deficiency of our sample. Large stores extend more credit than small stores wherever they may be located; but their superiority in this respect is greater in larger cities and less in smaller towns; this is the conclusion based upon our somewhat too elaborate analysis for population and size - of - establishment factors taken together.

3. The Changes from Year to Year

A. INTRODUCTION

Outline of the Exposition. In passing to the time analysis, let us state that we shall here follow our general scheme. The distribution of ratios by various groups in each of the years will be taken up first, and followed naturally by a survey of the year-to-year movement of the ratios for each of the groups separately. The classifications dealt with in the study for the period as a whole will be utilized here as well; similarly, the order of presenting them will be the same. However, before coming to the assets ratios and worth ratios, let us concentrate for a moment on the sales ratio. This latter could have been computed only for those store years which recorded sales; because of the scarcity of the ma-

terial referred to above, it was deemed advisable to obtain these ratios only for groups by years, without subclassifying the groups any further. That is why the analysis of the sales ratio should logically be taken up at this point.

Sales Ratios. The sales ratios by years and the number of store years upon which they are based are given in Table XXIV:

TABLE XXIV

SALES RATIOS BY YEARS

	1925	1924	1923	1922	1921
Store years .	883	571	292	113	39
Sales ratios .	.333	320	311	323	204

If the ratio for the year 1921 be disregarded, since it is based on a rather small number of records, it will be evident that the ratio remains practically constant throughout the period. Whether this should be taken to indicate that the amount of credit granted by furniture stores remained stationary during this period is rather doubtful. Without breaking up the totality of stores in each of these years into groups by various classification principles and analyzing each of these groups separately, one cannot be sure of the meaning of these ratios. They do, however, tell us one thing: the outstandings for an average furniture store have amounted for the last five years to from 30 per cent to 35 per cent of the total sales *per annum.*

B. ANALYSIS BY GEOGRAPHIC DIVISIONS

(Tables XXV and XXVI, Charts 15 and 16)

Assets Ratios by States in Each of the Years. Turning now to an analysis of the distribution of assets ratios

by states for each separate year from 1921 to 1925, we find that the situation in each of these years is not strikingly different from that for the period as a whole. The states at the extremes—California, Colorado, and Virginia—are so far removed from the rest of the states that they tend in spite of considerable fluctuations in their ratios to retain their positions as lowest and highest in each of these years. Even Iowa, which in the study for the period as a whole was found to stand somewhat outside the range of the distribution of ratios for the main body of the states, has somewhat the same stability of position as the states at the extremes of the whole range. Ranking the states by the magnitude of their ratios in each of the years, we observe that the stability of the rank is generally dependent upon the proximity of the state to the range within which the states with approximately equal ratios are found. Thus the fluctuations of the ranks of the above-mentioned states are within the limits:

Virginia	From 1 to 2
Colorado	From 8 to 9
California	From 7 to 9
Iowa	From 4 to 7

At the same time, the ranks of the rest of the states fluctuate within much wider limits.

By way of comparison with the clothing study, we might state that the dispersion of the ratios for furniture stores does not diminish from 1921 to 1925. This may be another reflection of the difference in standing of credit granting as a merchandising policy with furniture stores as contrasted with clothing stores; while for the former all possible uniformity of practices in various regions had been achieved before 1921, for the latter a return to more general credit granting began only after the war, so that the uniformity in credit

TABLE XXV

RATIOS BY STATES AND YEARS

States	1921	1922	1923	1924	1925
1. Assets Ratio					
California	.155	.336	.331	.310	.337
Colorado	—	—	.241	.327	.337
Connecticut	—	.426	.409	.407	.433
Indiana	—	.538	337	.450	.419
Iowa	—	.449	.350	.411	.365
Kentucky	—	.471	295	394	.514
Pennsylvania	.466	.417	.388	.454	.424
Texas	468*	.431	.372	355	.430
Virginia	.435	546	502	.466	.491
2. Worth Ratio					
California	.185	.478	.548	.438	.488
Colorado	—	—	.449	.425	478
Connecticut	—	.593	496	.554	.585
Indiana	—	671	419	569	.555
Iowa	—	563	.425	.519	.463
Kentucky	—	597	.446	513	.633
Pennsylvania	.719	577	.505	713	.638
Texas	700*	592	464	.465	.585
Virginia	561	1 035	696	688	.670

* Ratio based on less than 10 store years.

policies throughout the country has been increasing from year to year in the period under observation.

Year-to-Year Movements of the Assets Ratios by States. For the year 1921, ratios for only four of the states are available; therefore we can discuss the annual fluctuations of the ratios only from 1922 on. All of the states have their ratios declining from 1922 to 1923, a rather surprising movement, which we shall consider presently. After 1923 the variation is not so uniform; five of the states have their ratios rising in 1924 and six

from 1924 to 1925. As a result of the process, only five of the states have ratios higher in 1925 than those with which they started.

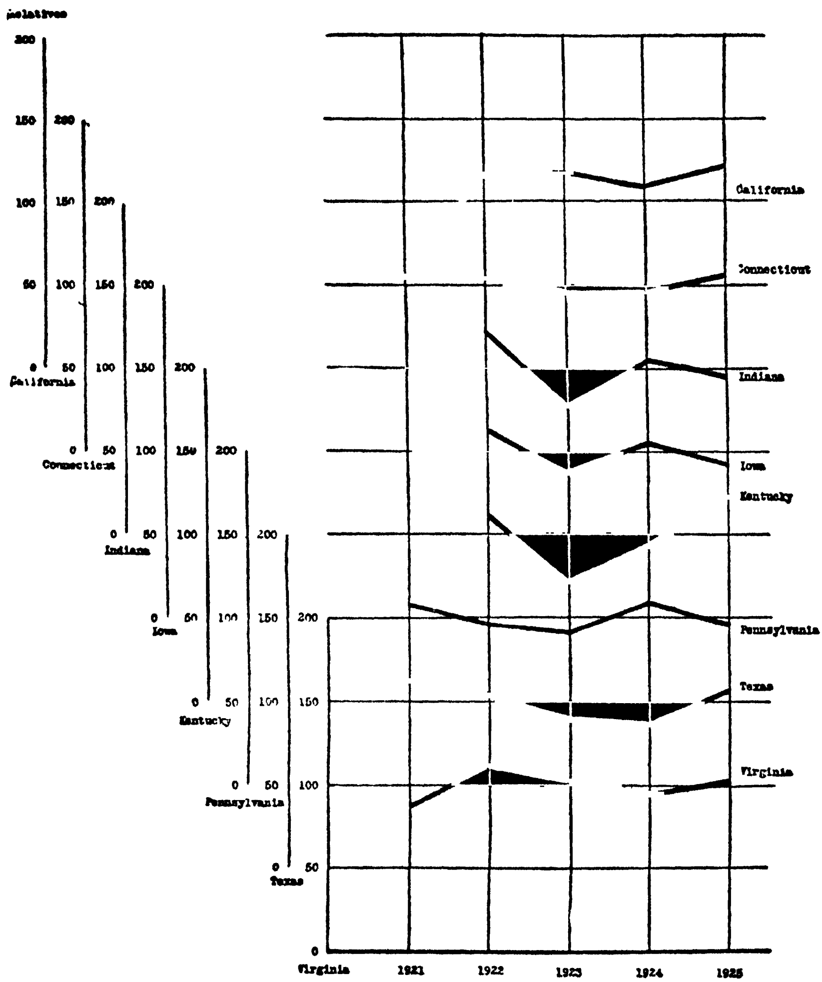


FIG. 15. YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY STATES. BASED ON TABLE XXV

The distribution by years of high and low points for each of the states reflects no less obviously this peculiarity of the annual fluctuations of the ratio. The highest ratios for four states and the next to the highest

for another two states out of a total of eight states (for which figures are available for this year) fall in 1922. An examination of the absolute figures seems to indicate that this is due not so much to a diminution in assets as to an increase in the accounts outstanding of the average store. Another confirmation of this inference is the fact that the ratio of accounts to sales in 1922 is higher than in the preceding and succeeding years. The lowest point for five of the states is reached by the assets ratio in 1923; for two states, it is next to the lowest in the same year. This result seems to have been produced by a diminution in accounts (five states) and by an increase in assets (four states) per average store.

We are inclined to attribute this practically inverse correlation between general business conditions and the fluctuations of the ratio to the operation of two factors: (1) length of maturity of credit in the furniture line; and (2) the nature of furniture as a commodity—its greater durability, its stronger resistance to depreciation once it becomes second-hand and its lesser portability as compared with articles of clothing. It is safer, on the one hand, to extend credit on it even in times of depression; moreover, at such times the extension of credit becomes in many cases imperative in order to make sales and to cover expenses. It is more difficult, on the other hand, to reduce the amount outstanding, when the need for it arises. If ten months is the average period for which an obligation to a furniture store remains unpaid, and if, at the time when collections slow up, the retailer considers it a bad policy to press his customers for payment, obligations incurred in one year are likely to be carried over into the next. What happened in 1922, then, was an accumulation of receivables largely carried over from 1921 and not abated by an elimination of credit sales in 1922; the ratio was

probably exaggerated by a diminution of merchandise on hand. In 1923, the old debts had been collected or written off, and the amount of new uncollected debts was much smaller, because less credit was granted and because collections were made more promptly. In the same period, the amount of merchandise on hand had relatively increased.

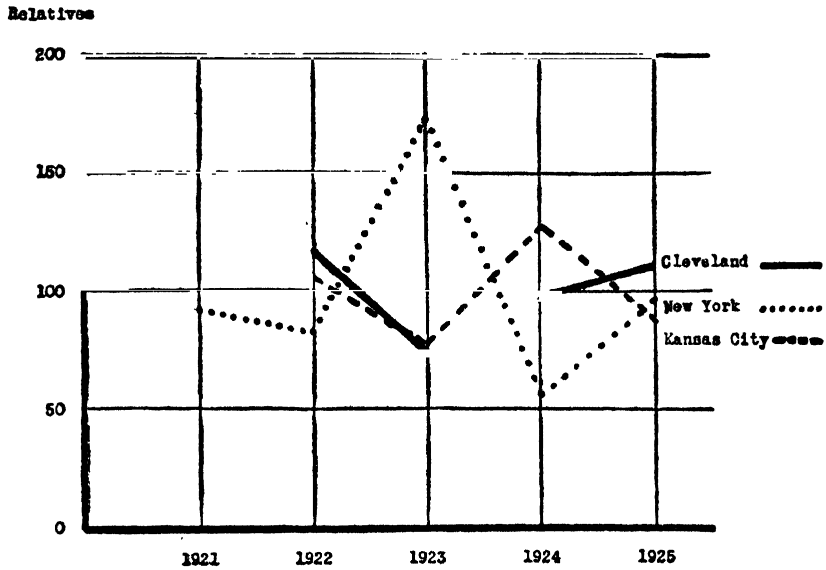


FIG. 16 YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY INDIVIDUAL CITIES. BASED ON TABLE XXVI

The Assets Ratios by Individual Cities. The distribution of ratios in separate years (or whatever of it is available) is about the same as that presented by the period as a whole. The order of the cities, with respect to the magnitude of the ratio, beginning with the smallest ratio, is New York City, Boston, Kansas City, Cleveland, and New Orleans. As to the year-to-year movement, the complete picture of this is available only for New York City, and even this series is somewhat defective. In 1923, the ratio for New York is almost

double that for the whole period. Such an extreme deviation is explained by the fact that in 1923 there were two stores in New York City with assets over $1,000,000 each, for which the assets ratio was .702. Were these stores eliminated, the ratio for New York for 1923 would have been .257, which would be a little lower than the ratio for 1922. We have to bear this fact in mind, because later it will do service in explaining the inordinately high ratio for the cities of 500,000 and over for the year 1923.[1] If .257 be taken as the

TABLE XXVI

RATIOS BY INDIVIDUAL CITIES AND YEARS

Cities	1921	1922	1923	1924	1925
1. Assets Ratio					
Boston	——	——	.289*	.406	384
Cleveland	——	646*	.433	.541	612
Kansas City, Mo.	——	.549*	.412	.665	.464
New Orleans	——	——	——	745	.668*
New York	294	260	.549	.175	312
2. Worth Ratio					
Boston	——	——	.304*	.465	.581
Cleveland	——	.697*	.632	.654	.764
Kansas City, Mo.	——	.665*	.504	.945	.549
New Orleans	——	——	——	1.069	.726*
New York	.379	.351	.648	.211	.716

* Ratio based on less than 10 store years.

[1] The influence exercised by these two New York stores exemplifies in a striking manner the difference between the method of aggregates used in our study and the method of "common ratio" followed by the Harvard Bureau of Business Research. The advantages and disadvantages of both of these methods have been set forth at length in the introduction. The balance of advantages appeared, from our viewpoint, to be with the method of aggregates. The importance of choosing the proper method has been sufficiently illustrated by this case.

New York ratio for 1923, we shall have the ratios for all cities for which ratios are known declining from 1922 to 1923; that is, the movement for the cities would be in complete harmony with that for the states. The movement in the other years is less susceptible of serving as the basis of a generalization. The net result of the annual changes is that the New York and Cleveland ratios in 1925 are practically the same as they were when they started; while for Kansas City the ratio in 1925 is perceptibly lower than in its first year, 1922. In conclusion, we must warn the reader against imputing too much reliability to the ratios for the cities, since (New York excepted) they are subject to violent and largely accidental fluctuations.

The Worth Ratios. Turning now to the worth ratios by geographic divisions, we shall again speak rather of the quotients of the worth ratios by the corresponding assets ratios, since these will exhibit whatever differences exist between the worth ratios and the assets ratios in a more precise and usable form than a direct comparison. Examining these quotients, we find that while on the whole they are fairly stable, they decline considerably from 1922 to 1923 for six states out of eight; and for New York City, the only individual city for which reliable ratios are known for the two years in question, they also decrease. This confirms the hypothesis advanced before as to the probable factors which produced a uniform decline for the assets ratios from 1922 to 1923. The worth ratios are rarely less than .450; this means that at least 45 per cent of the proprietor's liquid resources are invested in the form of receivables. An accumulation of receivables due to slowing up collections and continued sale on credit must naturally bring about a shortage of free funds with which to liquidate obligations to manufacturers or jobbers from whom the stock was bought. This

results in a relative increase of accounts and notes payable, which lasts until collections are better and outstandings decrease. That is why in 1922 the worth ratio was in some cases about twice as large as the assets ratio, while in the following year it did not exceed one and a half times the assets ratio.

C. ANALYSIS BY POPULATION GROUPS
(Table XXVII, Chart 17)

The Assets Ratio in Separate Years. The distribution of ratios by population groups in the separate years is about the same as for the period as a whole. The ratios increase with the population of the city until the largest cities are reached, when it slumps off again. The latter

TABLE XXVII

RATIOS BY POPULATION GROUPS AND YEARS

Cities	1921	1922	1923	1924	1925
1. Assets Ratio					
Population under 2,500	.312	358	252	.303	.294
Population 2,500 to 10,000	.419	.299	375	.331	.339
Population 10,000 to 25,000	.461*	489	426	.454	.457
Population 25,000 to 100,000	547*	541	.348	459	.400
Population 100,000 to 500,000	.471*	561	.401	517	.457
Population 500,000 and over	328	.392	479	.266	.351
2. Worth Ratio					
Population under 2,500	.467	515	331	.403	.385
Population 2,500 to 10,000	.499	.395	.464	.450	.455
Population 10,000 to 25,000	.586*	691	581	.562	.611
Population 25,000 to 100,000	820*	.715	458	.684	.571
Population 100,000 to 500,000	.581	1 023	.602	.808	.685
Population 500,000 and over	.474	.508	.643	.351	.665

* Ratio based on less than 10 store years.

part of this statement is true for all years except 1923. In this year, the largest cities have the highest ratio, as compared to other population groups. Here again, we

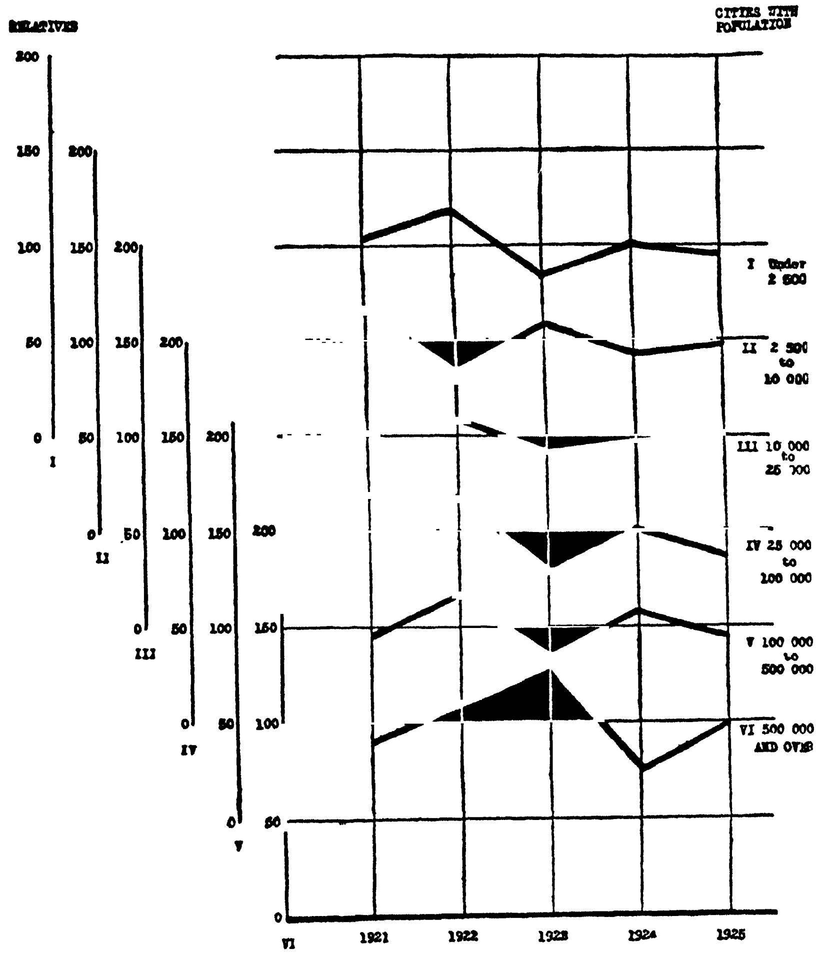


FIG. 17. YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY POPULATION GROUPS. BASED ON TABLE XXVII

observe the influence of the two New York stores that were mentioned above. Were these two stores excluded, the ratio for this population group in 1923 would be about the same as in 1922 and very little above the 1923

average for the country; that is, except for these two stores, the situation in 1923 would not have been different from that in every other year. The distribution in 1921 is also somewhat peculiar: the ratios begin to drop when we come to the cities with a population of from 100,000 to 500,000. But there is little reason to be disturbed about this; the 1921 ratios for half of the population groups are based on a small number of store years, so that no particular representativeness can be claimed for them.

Year-to-Year Fluctuations of the Assets Ratios. The year-to-year movement of the ratios for each population group presents a picture in many ways similar to that of the year-to-year movement of ratios by states. Out of six population groups, four have their highest ratio in the year 1922 and the remaining two in the year 1921,[1] while the lowest are scattered among the years from 1923 to 1925. For the four groups mentioned, the ratio rises from 1921 to 1922; and for five groups it declines from 1922 to 1923. The changes in 1924 and 1925 are in one direction for one-half of the groups, and in the opposite direction for the other half. It appears, then, that whichever way we classify our store years, the movement by years retains its character: the ratios are high in 1921 and 1922 and low in 1923–1925. It is to be observed that this movement is the exact opposite of that found for clothing stores. Upon the factors probably responsible for this difference we have dwelt in the preceding section, where the fluctuations of the state ratios have been surveyed. These factors are: the greater safety of financing retail purchases of furniture and the longer terms customary in the furniture line. In concluding, let us note that the movement from 1921 to 1922 discovered for population groups—an increase in

[1] If the troublesome 1923 New York store years be excluded from the highest population group.

the assets ratio—contributes to the plausibility of our hypothetical explanation. In 1921, the inventory was still fairly large and the accumulation of overdue accounts had not gone so far as in 1922, so that the ratio, while high, was still lower than that for 1922.

The Worth Ratios. An examination of the quotients of worth ratios by corresponding assets ratios for population groups leads us to another generalization. In discussing the worth ratios by states, we have observed that the worth quotients declined from 1922 to 1923 for almost all of the cases in which the assets ratio declined. Analyzing now the worth quotients by population groups, we find that, if the movement from 1921 to 1922 be disregarded, the worth quotients change in unison with the assets ratios in fourteen out of a total of eighteen cases under consideration. We take this to mean that in the furniture trade, when conditions are not too disturbed, the proportion of current assets representing accounts and notes payable fluctuates in about the same way as the proportion of current assets which takes the form of receivables. This interpretation is not invalidated by the fact that the movements from 1921 to 1922 do not tally with it. The situation in 1921 was much too chaotic to come neatly under any generalization; the change in current assets from this year to 1922 is therefore compounded of large fluctuations in all of the assets items, obscuring the change in receivables, even though these latter constitute perhaps the most important single item of assets. The dependence of the relative amount payable by the dealer upon the amount owed to him by his customers is more pronounced in the furniture line than we found it to be in the clothing trade. That there should be such a difference is not at all surprising: in the furniture business the outstandings amount to from 30 to 35 per cent of sales, while in the clothing trade they rarely exceed 10 per cent.

D. ANALYSIS BY SIZE-OF-ESTABLISHMENT GROUPS
(Table XXVIII, Chart 18)

Assets Ratios in Separate Years. The comparison of the yearly distributions of ratios by size-of-establishment groups is somewhat hindered by the fact that we have no complete figures for the years 1921 to 1923. Nevertheless, the general impression produced by an examination of the distribution is that for each of the years the situation is about the same as for the period as a whole.

TABLE XXVIII

RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS AND YEARS

Stores	1921	1922	1923	1924	1925
1. Assets Ratios					
Current assets					
under $5,000	—	186	216	.198	.256
$ 5,000 to $ 10,000	206	.196	.292	.246	.274
10,000 to 20,000	272	.331	276	.254	.330
20,000 to 50,000	326	.446	.349	339	373
50,000 to 100,000	.408	.406	.371	.418	.437
100,000 to 250,000	—	.395	.477	.491	.481
250,000 to 1,000,000	—	—	.324	.474	.537
1,000,000 and over	—	—	—	.230*	.293
2. Worth Ratios					
Current assets					
under $5,000	—	.239	.268	.227	.322
$ 5,000 to $ 10,000	.252	.247	381	.304	.354
10,000 to 20,000	.427	433	.355	.335	.429
20,000 to 50,000	459	.609	.437	.445	.505
50,000 to 100,000	618	.547	.493	.580	.604
100,000 to 250,000	—	.590	.646	.694	.694
250,000 to 1,000,000	—	—	.470	.714	.741
1,000,000 and over	—	—	—	.300*	.613

* Ratio based on less than 10 store years.

The ratios increase with the amount of current assets and reach a peak for stores with assets of from $100,000 to $250,000 in some years and for stores with assets of from $250,000 to $1,000,000 in other years.

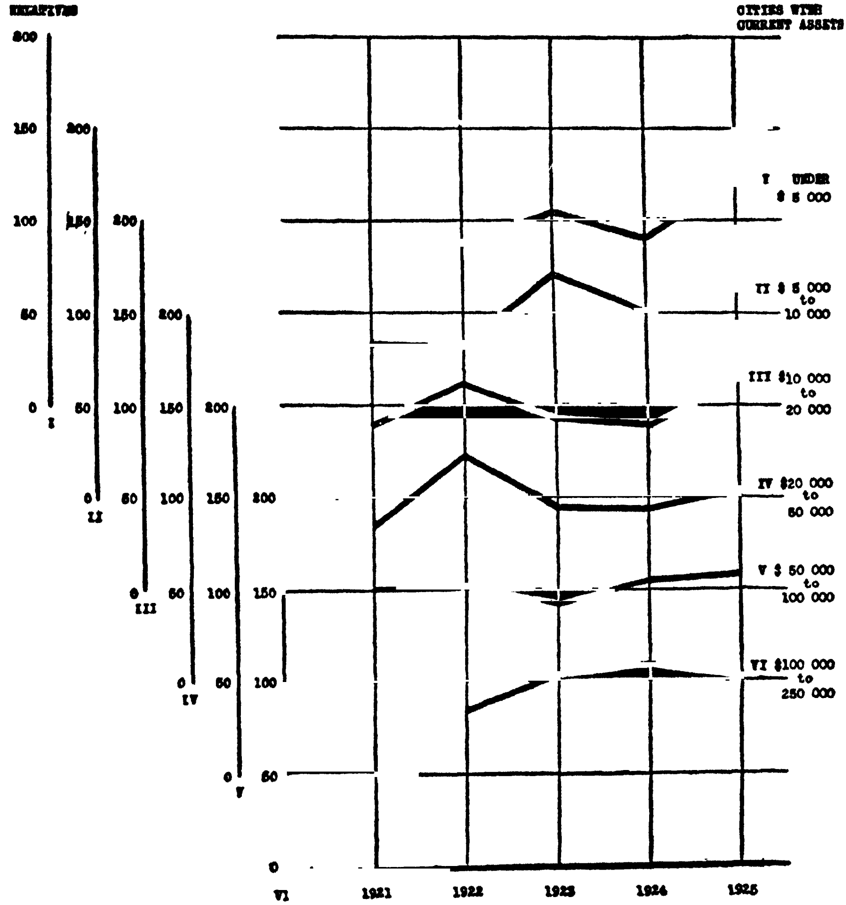


FIG. 18. YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS. BASED ON TABLE XXVIII

Year-to-Year Changes in the Assets Ratios. When the assets ratio is examined for its year-to-year movement, it is found that the stores seem to break up into three groups, each with a different type of movement. The first group consists of the small stores with current assets

under $10,000. The ratio here increases regularly without any break from 1921 to 1925. The second consists of the fair-sized stores with current assets of from $10,000 to $100,000. The ratio for these stores is high in the years 1921 and 1922, and low in 1923 to 1925, a movement similar to the one we observed for the geographic divisions and population groups. The third group includes the large stores with assets of $100,000 and over. The ratio for these rises continuously from 1923 to 1925. The first group of stores probably represents the small-town furniture stores, which perhaps sell as large a quantity of house furnishings as of furniture: the increase in the ratio here is a reflection of the more liberal financing of consumers in their purchases of durable articles, extending now to small furniture pieces and articles of house furnishings. With regard to the second group, it might be said that it represents the typical retail furniture establishment, and includes the majority of stores, judging from the similarity of the annual fluctuations of its ratios to those of most of the states and population groups. The explanation of the year-to-year movement for this group is probably the same as that advanced in the analysis by geographic divisions. The changes in the ratios for the third group follow closely the changes in the general business conditions; that is, the rationality and flexibility of the credit policies of these large concerns might serve as a partial explanation of this ratio movement. The alternative explanation might be that these large concerns, in line with other branches of retail trade, have adopted more liberal credit policies. However, there is no definite ground for such an inference in our figures.

Worth Ratios. Not much can be said about the worth ratios by size-of-establishment groups. Turning to the worth-to-assets quotients, we find that their fluctuations are correlated here with those of the assets

ratios less closely than we found them to be in the population-group analysis. Nevertheless, the harmony in the movement of the two is sufficient to make applicable our generalization regarding the dependence between amounts owed by, and those owed to, furniture dealers in this classification as well. Otherwise, these quotients increase in each of the years as we pass from smaller to larger stores, a fact which agrees with our findings for the period as a whole. Within each size group the quotients change little from one year to the next.

A comparison with similar quotients for other classifications reveals the fact that this regularity of change in one direction and relative stability in another are peculiar to the size-of-store quotients. This circumstance furnishes additional support to the hypotheses advanced above. Increase of the worth quotients with size of store as contrasted with the absence of any such regularity of change in the quotients of other classifications strengthens our conviction that in the furniture line the relative amount of borrowing done by the dealer depends not upon the accessibility of the local loan market to him, but upon the amount of his purchases from the manufacturers or jobbers. The dealer thus borrows mainly from the latter rather than from local banks; hence, he shifts, at least in part, the heavy burden of financing the consumer to the links "higher up" in the distributive chain. On the other hand, the comparatively great stability of the size quotients in time is perhaps of less significance. It can be accounted for only on the ground that, since the classification dealt with here is one by current assets, a considerable change in receivables affecting the worth-to-assets quotient is likely to throw the establishment from one assets group into the next; thus within each assets group the quotient may remain fairly stable on purely technical grounds.

E. SUMMARY

The time analysis of furniture data has enabled us to emphasize those features in the financing of the consumer by the retailer which are peculiar to lines of business that deal in durable goods of slight portability and high value. In consequence of those characteristics of the merchandise, selling on credit becomes, on the one hand, the only practicable way of selling it and, on the other hand, constitutes a method of disposition almost as safe and profitable as selling for cash. Where the situation is such, financing the retail purchaser is natururally done on terms as convenient to him as possible, and becomes an every-day, routine transaction for the retail dealer. This accounts for the fact that, in times of depression, receivables constitute a greater part of current assets, and net worth is relatively smaller than at other times. On the other hand, it results in certain adjustments in the relation between the retailer and the agencies from which he purchases; a part of the burden of financing is apparently borne by the latter. In spite of the fact that credit sales are so widely used, a difference in policy between smaller and larger stores is to be observed. The smaller stores rely upon credit sales to a greater extent when times are bad and sales are difficult to make, while larger stores follow the opposite course, playing ostensibly for safety. To be sure about this last point, however, we should have to extend our study to a larger number of stores and to a longer period of time than was feasible in this investigation.

PART THREE

CREDIT IN RETAIL JEWELRY STORES

GENERAL INTRODUCTION

Source of Information and Selection of Material
Separate Analysis of Stores Showing Sales and Its Purpose
Long-Time Study, Its Rationale and Its Limitations
Short-Time Study and Its Purpose

Source of Information and Selection of Material. The information on which this study is based was obtained from the National Jewelry Board of Trade, a highly successful credit-rating organization which has records in its files for as many as 30,000 units engaged in the sale of jewelry-store merchandise. In selecting the material, wholesalers and jobbers as well as those jewelers who are engaged primarily in manufacturing have been excluded. Again, stores which are selling jewelry as one of several kinds of merchandise have not been included in our study. The Board of Trade classifies the stores for which it has records in as many as twenty groups. Of these, we have used only the following: jewelry stores, jewelry stores and repair shops, jewelers and optometrists. The stores doing at least a part of their business on instalment have been analyzed separately in a supplementary part of this study.

Separate Analysis of Stores Showing Sales and Its Purpose. The financial statements in the files of the Board of Trade are a modified form of the balance sheet; therefore, the amount of annual sales is not shown in all of them. Among the statements selected for this study, less than a half contained any sales figures. While this item may be a matter of subordinate importance for credit-rating purposes, it is quite significant in our study, both as

a criterion for classifying establishments by volume of business done and as a base to which the accounts outstanding are to be related. On the other hand, the number of units analyzed is quite important as well. The larger this number, the more reliable are the conclusions established by analyzing them; this is especially true when the method of aggregates is used, as has been done in this study. These considerations prompted us to analyze separately those stores for which sales were given. The analysis has been carried on along lines similar to those followed in the analysis of all stores except that, in addition, the sales ratio has been computed. A comparison of the sales ratio and the assets ratio for the stores showing sales is made in order to determine the relation between these two ratios for various classes of stores. A knowledge of this relation permits us to deduce the sales ratio from the assets ratio based on all stores without resorting to general considerations of a quasi-mathematical nature of the type utilized in the furniture study.

Long-Time Study, Its Rationale and Its Limitations. The records kept by the Board of Trade go as far back as the late eighties of the nineteenth century. This provides a welcome opportunity for studying credit trends for the long period and for comparing the results obtained from this study with those derived from an analysis of the information for the last six years. We were subject to certain handicaps in this long-time study: the material was not so extensive as to be susceptible of treatment for each of the years separately; the population for the towns in which the stores were located was not available for the intercensal years; our classification by amount of current assets was of dubious validity for the earlier years covered by this study, because of the fact that the value of money and the organization of retail

business have changed tremendously since the "mauve decade." To overcome these difficulties, certain assumptions and allowances for approximations had to be made. Thus we had to limit ourselves to the analysis of the data by periods of years rather than by separate years. Population centers were classified in rather broad groups, and we have been careful to notice the relatively few cases in which a city passed from one population group into another within the period under consideration. No statistical device was used to take account of the third difficulty—that regarding the different relative importance of stores having the same current assets at different times. This was simply borne in mind in following through the changes in the credit ratios for stores of various sizes.

Short-Time Study and Its Purpose. Our study of jewelry stores thus falls into two parts: one covering a long period of time, to be precise, from 1897 to 1925; the other covering the six years from 1919 to 1925. In the first part, we have not touched upon the time prior to 1897, because the material for those earlier years is much too scarce to be analyzed even by periods of years. In the second part, we have made a study by separate years with population groups much more narrow than those used in the long-time analysis, i.e., with a population classification similar to the one used in the clothing and furniture studies.

The purpose of investigating the last six years separately is obvious. In the first place, the material for these years is so abundant as to permit of a more detailed analysis; secondly, similarities between the periods covered and between the methods of analysis employed make possible a comparison of the results of this short-time study with those of the clothing and furniture analyses; thirdly, a comparison of the conclusions drawn

from the second part of the study with those obtained from the long-time analysis enables us to pass judgment on the reliability of conclusions regarding secular tendencies suggested by a short-time study (for jewelry and, by analogy, for other lines as well). We shall take up first the long-time analysis, follow it by an exposition of the results of the short-time study, and supplement it by an analysis of instalment stores in which somewhat different methods of treatment were used.

THE LONG-TIME STUDY
(Years 1897–1925)

1. Introduction

Grouping of Years into Periods
Distribution of Store Years by States and Individual Cities
Classification of the Data by Population
Classification of the Stores According to Size

Grouping of Years into Periods. In setting up time periods for the purpose of this study, we have guided ourselves by the year-to-year movement of the ratio of receivables to sales and of receivables to current assets for the aggregate of all stores available. An inspection of the plot of the ratios by years revealed the fact that there are distinct groups of several consecutive years in which the ratio oscillates about clearly marked levels. These groups of years are not, in all cases, the same for the sales ratio as for the assets ratio. Moreover, while for a certain number of years one of the ratios may show a relative stability, the other ratio may fluctuate without any noticeable regularity. Nevertheless, relying upon the movement of one ratio or the other and taking account of periods established by students of general business conditions, we have arrived at the following grouping of years:

1897 to 1899	(low)
1900 to 1903	(high)
1904 to 1909	(low)
1910 to 1913	(high)
1914 to 1917	(falling)
1918 to 1922	(moderately high)
1923 to 1925	(very high)

Distribution of Store Years by States and Individual Cities. The states and individual cities, the establishments of which have been analyzed, are the same here as in the other retail lines. The distribution of the material by geographic divisions and periods of years is presented in Table XXIX.

Classification of the Data by Population. As mentioned above, the population groups in this study have been much broader than the groups used in all previous studies. The number of groups has been reduced from six to four in the following way. The lowest population group, under 2,500, has been left unchanged; it was assumed that the places which had a population under 2,500 in 1920 had no larger a population, if they were in existence at all, before 1920. The next three population groups in the ordinary analysis have been combined here into one; i.e., our second group is one for all towns with a population of from 2,500 to 100,000. One might claim that such a large group makes the classification meaningless. Yet this was the best we could do. After a preliminary survey of the material it was estimated that about one-third of the number of stores in each of three smaller groups (combined here into one) has been shifting during the twenty-five years under consideration from one of these groups into another. To follow through these changes would have been a time-consuming procedure, and would have yielded results of doubtful significance. We should have had to make assumptions about population in intercensal years and, what

TABLE XXIX

DISTRIBUTION OF JEWELRY STORE YEARS BY STATES AND CITIES

States and Cities	Row*	1923 to 1925	1918 to 1922	1914 to 1917	1910 to 1913	1904 to 1909	1900 to 1903	1897 to 1899	Prior to 1897	Total
California	1	129	216	136	135	114	25	9	4	768
	2	38	79	56	53	57	10	4	–	297
Colorado	1	17	32	38	31	43	9	4	3	177
	2	6	12	16	8	11	–	1	1	55
Connecticut	1	50	67	46	46	35	14	3	3	264
	2	7	12	18	8	11	3	2	–	61
Indiana	1	53	81	68	77	97	44	8	8	436
	2	20	40	29	28	50	14	4	5	190
Iowa	1	38	106	74	91	94	43	3	3	452
	2	17	32	31	49	57	20	1	–	207
Kentucky	1	20	37	29	39	35	25	6	4	195
	2	10	14	12	20	16	6	4	–	82
Pennsylvania	1	71	134	117	135	117	50	20	2	646
	2	21	46	47	57	51	20	9	2	253
Texas	1	65	123	90	101	73	28	10	1	491
	2	27	54	51	52	31	15	5	1	236
Virginia	1	13	50	44	50	43	8	2	–	210
	2	4	23	17	16	24	5	–	–	89
Boston	1	55	62	27	26	18	6	–	–	194
	2	5	4	–	–	–	–	–	–	9
Cleveland	1	40	47	49	21	13	1	1	–	172
	2	15	8	4	4	3	–	–	–	34
Kansas City, Mo.	1	13	43	22	21	15	2	–	–	116
	2	–	11	7	3	3	–	–	–	24
New Orleans	1	27	49	20	34	20	3	1	–	154
	2	8	11	1	6	8	1	1	–	36
New York	1	311	378	152	165	105	15	9	–	1,135
	2	60	78	35	52	14	4	3	–	246
Total	1	902	1425	912	972	822	273	76	28	5,410
	2	238	424	324	356	336	98	34	9	1,819

* Row 1 gives the total number of store years; row 2 indicates the number of store years reporting sales.

is more important, to assume that towns with a population of from 2,500 to 10,000 represented more or less the same thing in the nineties as in the post-war years. The third and fourth population groups are here the same as the fifth and sixth in our ordinary classification, i.e., they are from 100,000 to 500,000 and 500,000 and over. For technical reasons, it was quite easy to take account of the transition of cities from one of these last groups into the others. Since this has been done in all cases, there should be no doubt that these last population groups include only those cities which belong to them on the basis of the most reliable statistics. In concluding, we must mention a small sub-group which was inserted between the second and the third groups. It comprises those cities which had a population of over 100,000 in 1920, but whose population was less than

TABLE XXX

DISTRIBUTION OF STORE YEARS BY POPULATION GROUPS

Cities	Row*	1923 to 1925	1918 to 1922	1914 to 1917	1910 to 1913	1904 to 1909	1900 to 1903	1897 to 1899	Total
Population under 2,500	1	86	184	166	195	156	81	19	887
	2	30	61	69	80	68	26	7	341
2,500 to 100,000	1	217	437	327	355	351	125	36	1,848
	2	90	196	160	167	189	57	20	879
100,000 to 500,000	1	102	199	153	327	115	36	8	940
	2	21	47	42	34	39	10	4	197
500,000 and over	1	497	605	259	80	166	22	13	1,642
	2	97	120	50	68	28	4	3	370
reaching 100,000 by 1920	1	—	—	7	15	34	9	—	65
	2	—	—	3	7	12	1	—	23

* Row 1 gives the total number of store years; row 2 indicates the number of store years reporting sales.

that according to the preceding census. Unfortunately, this sub-group includes only a rather small number of stores, so that the conclusions derived from studying it are not very reliable. See Table XXX.

Classification of the Stores According to Size. The classification of stores by size has been subjected above to a passing criticism. It was also pointed out that the features criticised could scarcely be avoided. Even a person with a thorough knowledge of the jewelry business could not well avoid arbitrariness in setting up two different classifications for the beginning and the end of the period studied, classifications which would take account of the continually changing relative position and significance of stores of the same size in the jewelry business. For these reasons, our ordinary classification has been used here without introducing any particular modifications in order to adapt it more successfully to a long-period study. Since the number of stores for which sales are known is too small, the amount of current assets rather than the volume of sales has been used as a criterion. One might well argue that, since we analyzed separately the stores showing sales, in this separate analysis sales might well have been used as a criterion. This, however, would destroy the comparability of the study of the smaller sample with that of all stores. This is a serious consideration, because one of our chief aims in analyzing the smaller sample is to secure some information as to the relation between the sales ratio and the assets ratio which would be applicable by analogy to the larger sample. An examination of the raw material indicated that the classification used in the table below is the one which is most suitable, because it makes for a relatively "normal" distribution of stores, and because it is almost identical with the classification used in the furniture analysis, thus facilitating possible comparisons.

TABLE XXXI

DISTRIBUTION OF STORE YEARS BY SIZE-OF-ESTABLISHMENT GROUPS

Stores	Row*	1923 to 1925	1918 to 1922	1914 to 1917	1910 to 1913	1904 to 1909	1900 to 1903	1897 to 1899	Total
Current assets under $2,000	1	77	99	145	177	160	84	31	773
	2	12	12	25	35	39	21	13	157
$ 2,000 to $ 5,000	1	119	237	222	243	195	87	19	1,122
	2	13	45	80	95	79	36	9	357
5,000 to 10,000	1	188	351	205	235	206	56	16	1,257
	2	62	121	96	94	100	18	8	499
10,000 to 20,000	1	230	305	169	158	134	29	6	1,031
	2	60	117	69	80	61	15	3	405
20,000 to 50,000	1	160	270	113	101	89	13	4	750
	2	59	101	41	37	42	7	1	288
50,000 to 100,000	1	74	92	25	26	22	2	—	241
	2	22	17	6	10	10	1	—	66
100,000 to 250,000	1	37	38	15	17	10	—	—	117
	2	5	9	6	5	5	—	—	30
250,000 to 1,000,000	1	16	26	18	15	6	2	—	83
	2	5	2	1	—	—	—	—	8
1,000,000 and over	1	1	7	—	—	—	—	—	8
	2	—	—	—	—	—	—	—	—

* Row 1 gives the total number of store years; row 2 indicates the number of store years reporting sales.

2. The Period as a Whole

(Tables XXXII–XXXV, Charts 19–26)

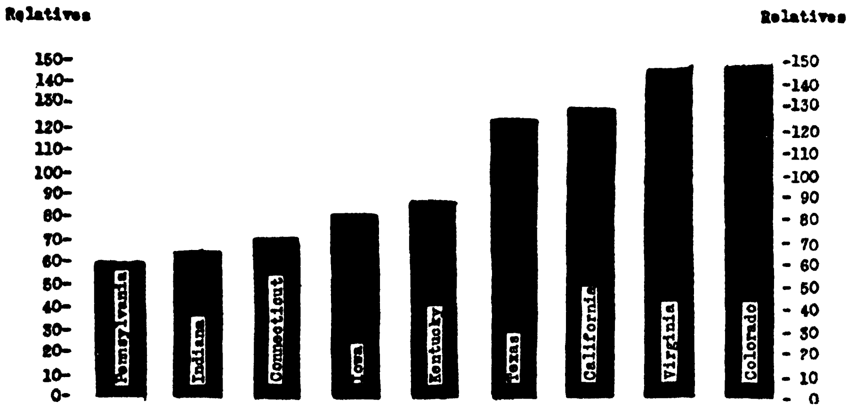


FIG. 19. SALES RATIO RELATIVES BY STATES. BASED ON TABLE XXXII, COLUMN I

A. ANALYSIS BY GEOGRAPHIC DIVISIONS

Sales Ratios by States. An inspection of the distribution of the sales ratios by states indicates that so far as jewelry stores are concerned the Far West and the South are about equally entitled to be known as the section of the country where the largest relative amount of credit is outstand-

TABLE XXXII

RATIOS BY GROUPS OF STORES FOR THE PERIOD 1897–1925 AS A WHOLE

	Stores Reporting Sales			Total Stores	
	Sales Ratio	Assets Ratio	Worth Ratio	Assets Ratio	Worth Ratio
Geographic divisions:					
California	124	.093	.134	.083	.115
Colorado	.146	.146	.175	089	.107
Connecticut	067	075	092	.115	.141
Indiana	.063	088	.101	.115	.132
Iowa	.079	.069	.084	.084	.102
Kentucky	.085	089	108	.092	.113
Pennsylvania	058	058	.068	.060	.073
Texas	.121	.123	.160	.119	.155
Virginia	145	143	.258	.144	.230
Boston	.039*	088*	.118*	105	.134
Cleveland	.173	168	.261	.164	.242
Kansas City	.073	.069	.094	.073	.088
New Orleans	164	.152	.184	.162	.255
New York	062	086	.105	.139	.182
Population groups: cities:					
Population					
under 2,500	.083	.079	.094	.084	.097
2,500 to 100,000	.087	084	.108	.091	116
100,000 to 500,000	.121	118	.153	.114	.151
500,000 and over	093	.114	.156	.121	.159
reaching 100,000 by 1920	.127	.132	.200	.146	.210
Size-of-establishment groups:					
Stores with current assets					
under $2,000	.053	.076	.094	.060	.072
$ 2,000 to $ 5,000	062	.076	092	.058	.070
5,000 to 10,000	.059	.068	.084	.069	.083
10,000 to 20,000	.070	.074	.092	.075	.092
20,000 to 50,000	.078	.082	.102	.093	.114
50,000 to 100,000	.140	.132	.176	.110	.150
100,000 to 250,000	.117	.114	154	.127	.177
250,000 to 1,000,000	.159*	.166*	.283*	.143	.194
1,000,000 and over	—	—	—	.213*	.269*

* Ratio based on less than 10 store years.

ing. Thus the sales ratios for Colorado and Virginia are .146 and .145, these being the highest ratios for the country. In the same way, California and Texas pair nicely with ratios of .124 and .121 respectively. On the other hand, the Eastern states, such as Connecticut and Pennsylvania, have the lowest ratios for the country, or .067 and .058 respectively. The assets ratio for stores showing sales is not significantly different from the sales ratio, either in its absolute magnitude or in the distribution by states.

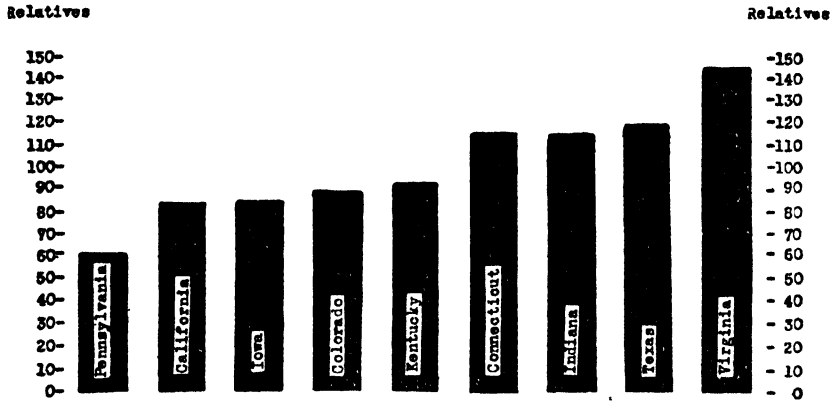
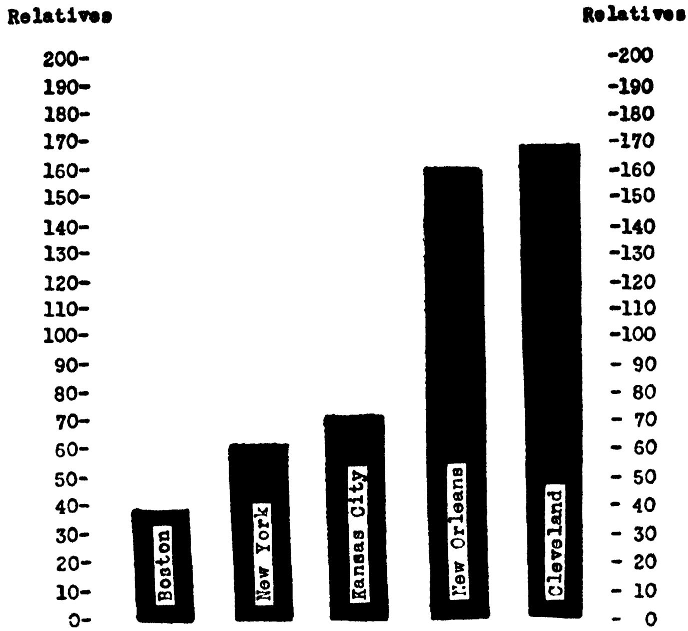


FIG. 20. ASSETS RATIO RELATIVES BY STATES. BASED ON TABLE XXXII, COLUMN 4

Assets Ratios Based on Total Stores by States. The assets ratio for all of the stores—and here we are dealing with a sample which is about two and one-half times as large as the one analyzed in the paragraph above—while in general indicative of the same situation, exhibits a number of differences worth noticing. The Far Western states have their assets ratios in this sample considerably lower than either the assets ratio or the sales ratio in the smaller sample. Quite the reverse is the situation for Connecticut and Indiana: the assets ratios of these states in the larger sample are much greater than their respective ratios in the smaller sample. These differences are easily explained by the discrepancies in the com-

position of the larger and of the smaller sample. It happens that for the first two states the stores which did not report sales are considerably smaller than those stores on the reports of which the sales ratios were based. Precisely the opposite condition prevails with regard to the second pair of states; for them, the stores reporting sales contain a higher proportion of large establishments than the stores for which sales were not recorded. As will be learned later, larger stores grant as a rule more credit than smaller stores; hence the difference in the ratio between the two samples for the states mentioned. For the rest of the country, the ratios in the large sample are not far different from the ratios the distribution of which was described first. Thus it comes about that for total stores the Southern states have the highest assets ratios, and Pennsylvania has the lowest.

Difficulty of Selecting a Representative Sample. The discrepancy between the two samples discussed above draws our attention to the fact that the composition of the sample is important as determining the result obtained and the conclusions based thereon. While care has been taken in the process of selection to eliminate all factors which might vitiate the representativeness of the sample, it was difficult to insure high representative quality in a positive way. When a certain field of observation is at least superficially known, a part of it may be selected as representative for more intensive study, if one makes sure that the distribution of the known traits in this sample corresponds to that in the entire field. Our study of the jewelry stores has, however, been the first of its kind, at least in the number of stores included and in the time covered. There were no data for the jewelry trade as a whole to guide us in the selection of the sample. Thus, while everything possible has been done, we are not able to maintain with assurance that our sample is sufficiently representative and must tolerate



SALES RATIO RELATIVES BY INDIVIDUAL CITIES.
BASED ON TABLE XXXII, COLUMN 1

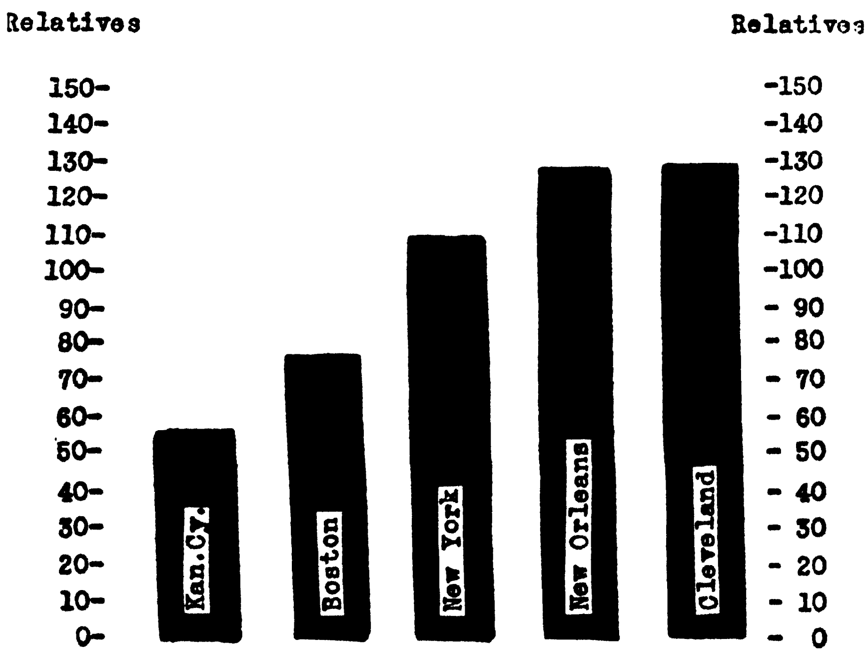


FIG. 22. ASSETS RATIO RELATIVES BY INDIVIDUAL CITIES.
BASED ON TABLE XXXII, COLUMN 4

such discrepancies as are obviously due to differences in the composition of the data analyzed.

Sales Ratios and Assets Ratios by Individual Cities. The ratios for the individual cities are, as a rule, slightly higher than those for the states. This is quite natural, since we generally find the magnitude of the ratio proportional to the size of the place in which the store is located. Again, this is probably connected with the fact that in the individual cities we have a predominance of large stores as well as of those doing a semi-instalment business. In the larger sample for the individual cities, the assets ratio is about the same as the ratio for the smaller sample, except in the case of New York City. The distribution of the cities by the magnitude of the ratio is, therefore, similar in the case of the two samples. The city with the highest ratio is Cleveland; it is followed by New Orleans; New York and Boston take the middle position, and Kansas City lags behind with the lowest ratio. It is worth noting that the distribution of high and low ratios among the cities here is quite similar to the distribution we found for clothing and furniture stores. New Orleans, the only Southern city among these, and Cleveland, the most typically industrial city, with highest ratios; New York City and Boston with relatively low ratios—this is an exact parallel to the findings in the previous studies. Kansas City presents an exception; but of it we shall have more to say in the study by periods of years.

The Worth Ratio. As in our other studies, we are interested here in the differences exhibited by the distribution of the worth ratios as compared with that of the assets ratios. These dissimilarities are easier to find when the quotients of the worth ratios by the corresponding assets ratios are computed. The quotients have also a significance of their own: they measure the ratio of current assets to current net worth, thus in-

dicating what proportion of the assets is derived from sources other than the proprietor's investment. In this study, where we deal with two samples at the same time, it is preferable to use the larger sample, simply because the ratios based on it are on the whole more reliable. Examining the variation of the quotients by states, we notice scarcely any regularity about it: the quotients are not larger where the assets ratios are either larger or smaller, neither do they vary according to the degree of the economic development of the states. One thing is certain, however: these quotients are truly indicative of the actual conditions in stores grouped according to states. This is shown by the surprising agreement, nay, the perfect identity in some cases, between the quotients based on the large sample and those based on the smaller sample. On the whole, the quotients by states show little variability; five of them fall within the limits of 1.20 to 1.23. The highest quotients are found for Virginia (1.60) and California (1.39), while the lowest quotient is that for Indiana (1.15). As is to be expected, the quotients for the individual cities are higher than those for the states. The city quotients follow in their variation the movement of the assets ratios, that is, they are larger for the cities having high assets ratios.

B. ANALYSIS BY POPULATION GROUPS

Sales Ratios and Assets Ratios. The ratios for stores arranged by population seem to increase as we pass from the lower population groups to the higher. Thus, the sales ratio for the smaller sample rises until we reach the group of cities with a population of 500,000 and over. The assets ratio for this sample exhibits in general the same tendency. However, in the highest population group the assets ratio exceeds the sales ratio by about 25 per cent, while in all the other population groups it is slightly lower than the sales ratio. This is simply a

reflection of the fact that the turn-over of the stores in the largest cities exceeds that of the stores in the smaller places. Consequently, the assets ratio of the highest population group is almost equal to that of the preceding group, while the sales ratio of the former is considerably lower than that of the latter. The existence of large differences of turn-over is worth bearing in mind, as we come to consider the assets ratio for the larger sample.

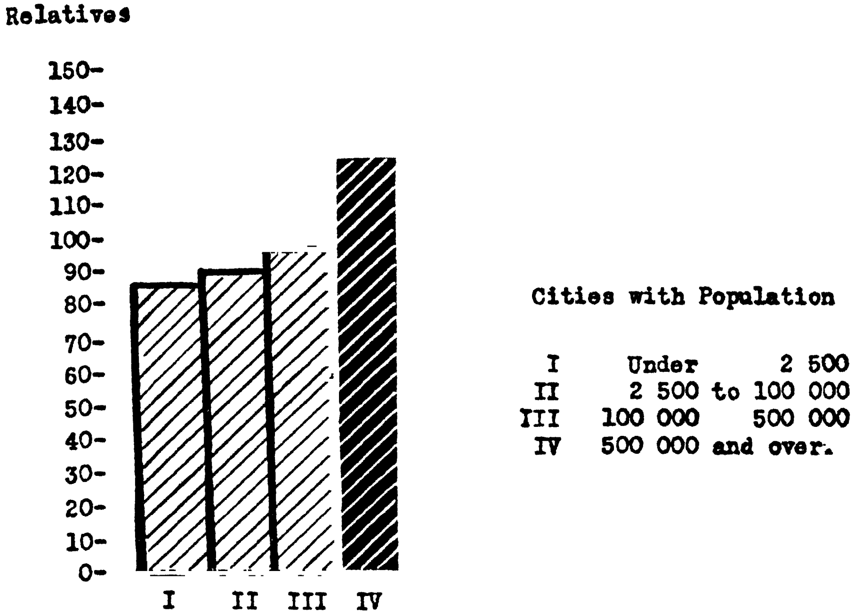


FIG. 23. SALES RATIO RELATIVES BY POPULATION GROUPS. BASED ON TABLE XXXII, COLUMN I

As we pass from the lower to the higher population groups, this ratio increases without any break, even when the highest population group is reached. The importance of the absence of a break is to be discounted on the ground of the probable variation of turn-over. The discounting is also justified by the fact that the increase in the assets ratio, as we pass from the 100,000-to-500,000 population group to the 500,000-and-over group, is very small. In concluding with the assets ratio for the larger

sample, we should mention that it is slightly lower than the assets ratio for the smaller sample. This lower ratio is, in all probability, due to the fact that the larger sample contains a higher proportion of smaller stores.

Sub-Group of Rapidly Growing Cities. In passing, let us notice the interesting fact that the ratios for the sub-group of cities which had a population of 100,000 or over in 1920, but which had not previously reached this size,

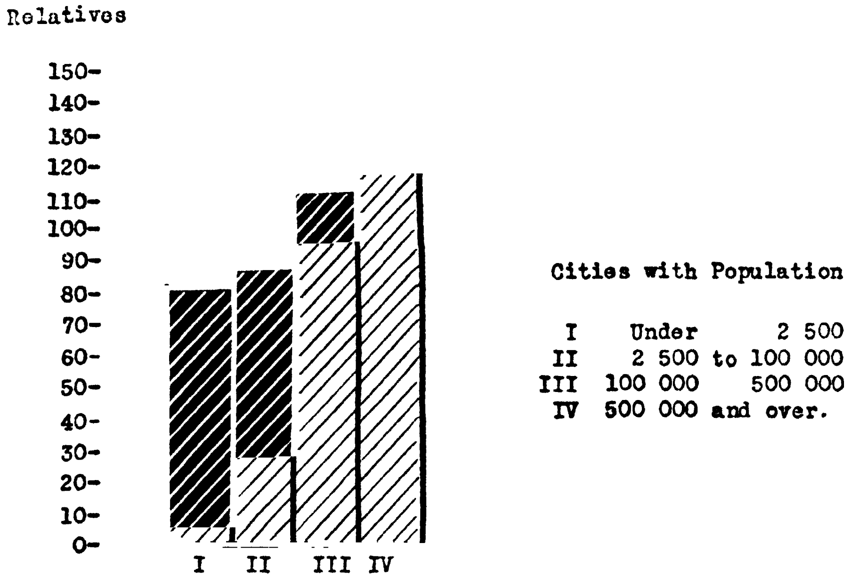


FIG. 24. ASSETS RATIO RELATIVES BY POPULATION GROUPS. BASED ON TABLE XXXII, COLUMN 4

are the highest ratios to be found in the classification by population. Not only that, but the difference between the assets ratio and the sales ratio is so great that it points to a turn-over considerably larger than that found even in the highest population group. These features of this population sub-group can be explained more satisfactorily when we come to deal with the influence of dynamic factors on the magnitude of the ratios. It is the element of growth, and rather rapid growth, which explains the extraordinary high level reached by the ratios for this sub-group.

Conditions Making Necessary and Possible the Granting of Credit by Stores in Large Cities. What are the factors which make for the rise of the ratio as the size of the city in which the stores are located increases? This tendency is not peculiar to the jewelry trade. We had occasion to observe it both in the clothing and in the furniture studies. Accordingly, the explanation of it must be general, i.e., it must not depend upon any considerations applicable only to the jewelry trade. The incomes of the population become more periodic, regular, evenly distributed in time, but broken up into smaller, though more frequent, portions as the occupation of the population changes from agricultural to industrial. The larger the city and the less its population is directly dependent upon agricultural production, the more regular and even is the flow of incomes within it and the greater is the opportunity for extension of credit on purchases involving values in excess of the weekly or monthly receipts of the individual consumer. Another consideration is that the stores in the larger cities make a more intensive use of banking facilities and employ more efficient systems of bookkeeping. All this enables them to sell on credit with greater ease than that within reach of stores in smaller communities.

Limitations of the Material for the Largest Cities. The argument of the preceding paragraph does not, however, explain why the sales ratio falls as we come to cities with a population of 500,000 and over. An examination of the composition of the highest population group would show that the cities in this group are distributed over the East, Middle, and Far West of the United States. Not a single Southern city is comprised in it. On the other hand, the group with a population of from 100,000 to 500,000 includes a considerable number of cities in Texas and Virginia, as well as the city of New Orleans. Perhaps these purely sectional differences, which find their reflection even in the ratios for the larger cities, would

account for the fall in the ratio as we reach the highest population group. Another possible explanation of this phenomenon may be briefly described as the greater specialization of stores in the larger cities in selling mainly for cash or mainly on credit. As pointed out in the introduction, the instalment jewelry stores have been excluded from the material dealt with in the main study; this has depressed the ratios for all population groups, but the effect has been greatest for the largest cities, where most of the instalment stores are located.

The Worth Ratio. The quotients of the worth ratios by the corresponding assets ratios increase with the size of the city, but are lower for the highest population group than for the preceding one. This is remarkable in view of the fact that these quotients are derived from the ratios based on the larger sample, for which the assets ratio of the highest population group is greater than that of the preceding group. It is proof positive of the fact that we can not speak here of the dependence of these quotients either upon the magnitude of the assets ratio or upon the economic development of the locality. The quotient for the sub-group of cities which reached the 100,000 mark by 1920 is the highest of all. It suggests that rapidly growing cities offer opportunities for the swift expansion of stores, and this, in turn, naturally leads to relatively more borrowing from the outside.

C. ANALYSIS BY SIZE-OF-ESTABLISHMENT GROUPS

Sales Ratios and Assets Ratios. An inspection of the ratios for stores classified according to the volume of current assets convinces us that the sales ratio in the smaller sample increases regularly as we pass from smaller to larger stores until we reach the highest few groups which contain the largest stores. These groups in the smaller sample include but a small number of stores, which accounts perhaps for the irregularity ob-

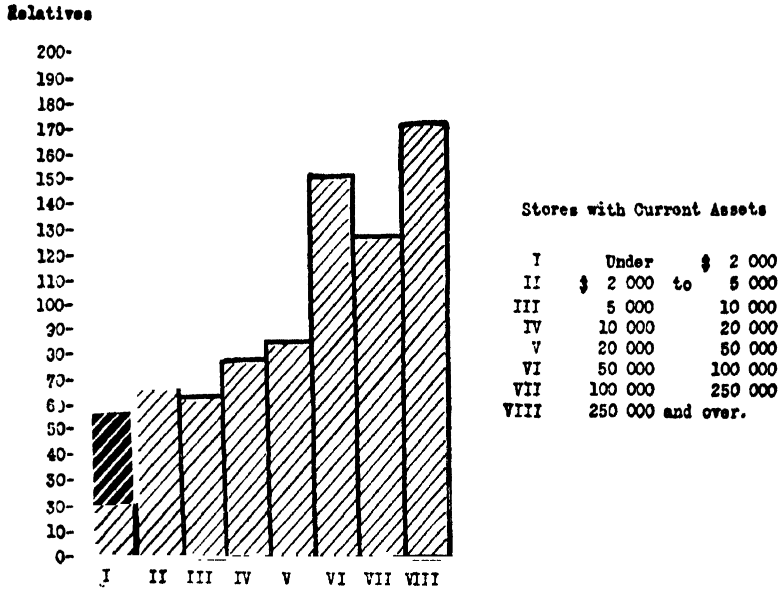


FIG. 25. SALES RATIO RELATIVES BY SIZE-OF-ESTABLISHMENT GROUPS. BASED ON TABLE XXXII, COLUMN 1

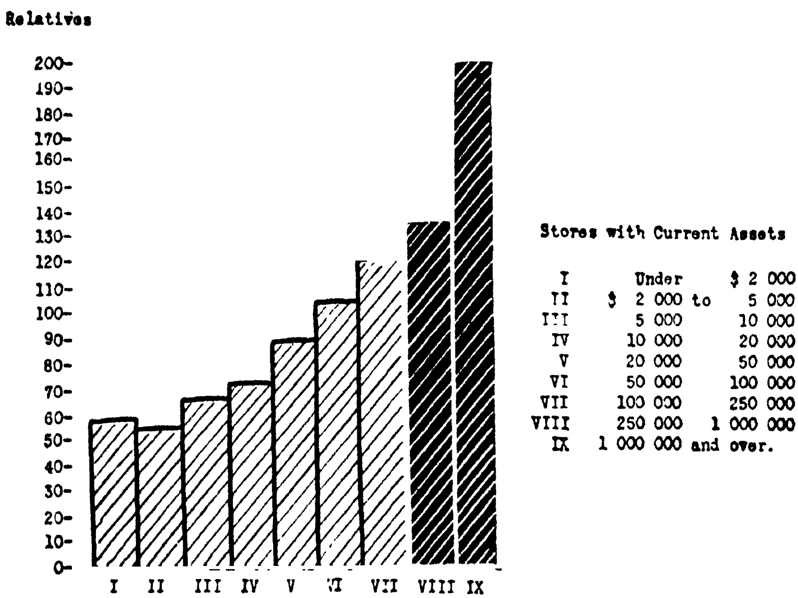


FIG. 26. ASSETS RATIO RELATIVES BY SIZE-OF-ESTABLISHMENT GROUPS. BASED ON TABLE XXXII, COLUMN 4

served in the movement of the ratio. The assets ratio for the smaller sample is not significantly different from the sales ratio. Whatever slight differences there are suggest that the turn-over in the smaller stores is not smaller, is perhaps even slightly greater, than that in the larger stores. This enables us to make use of the assets ratio for the larger sample as indicative, approximately, of the relative amount of credit outstanding. Viewed as such, the assets ratio of the larger sample corroborates in its movement the tendency which we observed for the smaller sample, and substantiates as well our hypothesis that the break in the ratio as we come to the highest groups is due merely to the fact that far too small a number of cases is comprised in these higher groups. Hence we may say with considerable assurance that the relative amount of credit rises evenly and uninterruptedly as we pass from the small stores to the large ones.

The Worth Ratio. The quotients of the worth ratios by the corresponding assets ratios rise as we go from smaller to larger establishments. The rise is rather slow until the group of stores with current assets of from $50,000 to $100,000 is reached. Then it increases at once by 13 points, and continues thereafter its slow and irregular climb. This sharp break in the series is explained apparently by the fact that among the larger stores there are many with a rather small rate of stock turn, as evidenced by the quotient of the assets ratio by the sales ratio for the smaller sample. The slowing up of turn-over combined with the increasing ability of large stores to buy on credit produces this sudden jump. On the whole, then, we may summarize the situation with regard to the worth ratios as indicating that the relative amount of borrowing increases with the size of a store, and hence as pointing to a greater turn-over of capital by larger stores.

D. CONCOMITANT EFFECTS OF THE SIZE-OF-ESTABLISHMENT AND POPULATION FACTORS

Introductory Note. As in our previous studies, we have to investigate here how the location of a store affects the amount of credit granted by it and we have to make this investigation for the stores of each typical size separately. This will bring out the influence of the population factor as isolated from the size-of-establishment factor and *vice versa*. In our analysis by state, by size of store, or by population group, where no account was taken of the influence of other factors, this influence was not eliminated from our data, so that the results obtained exhibit the combined effect of the work of several factors, of which one was considered as more important than the others and was used as a criterion in the classification of stores, while the others were operative with a force which was not determined. Although we can not assume that the composition of the sample for each of the states studied is the same with regard to distribution of stores by size or by population groups; and although we should certainly not be warranted in assuming that the states were about equally represented in all of our groups by size of store or by population, we are safe in supposing that the disturbing effects of the size-of-store and population factors in the state analysis, or of the regional factor in the population-group and the size-of-store analyses are not so great and important as the undetermined influences of the population factor in the size-of-store analysis, and of the size-of-store factor in the population-group analysis. Again, paucity of data would not permit a classification of stores in each of the fourteen regional groups (nine states and five individual cities) into the necessary sub-groups. For these reasons, the elimination of disturbing influences and the investigation of the operation of a factor in isolation

from the others have been confined to the size-of-establishment and population factors. By taking account of both of these factors at once, we get a glimpse of the separate effects of each and are enabled to comprehend how the combined effects mentioned in the preceding analyses have been produced.

Reasons for Limiting the Analysis to a Short Span of Time. It has been pointed out above that both the magnitude of a city and the size of an establishment change in meaning as criteria of a type of market or of a type of establishment as time goes on, particularly when the time is long enough and replete with important social and economic developments. In investigating the interrelation between the magnitude of a city and the size of an establishment, we must be even more careful than before to see that we are dealing with definite types having a clear and concise meaning. We can assure ourselves of it by applying the analysis to a considerably shorter period than the 1897 to 1925 stretch of time. It is advisable to limit the period surveyed also because in the second part of this study we are dealing with the post-war years. A similar investigation of the interrelation of the two factors could and should be undertaken there as well so that an analysis of the situation in post-war years would be available at all events. These considerations prompt us to limit the time for which the data were utilized in this analysis to the years 1904 to 1913.

Statistical Handling of the Problem. In order to deal with one factor at a time, recourse has been taken to a simple statistical procedure. Each group of stores set up according to the volume of current assets has been further subdivided into smaller groups by the use of the population criterion; the sales ratio for the smaller sample and the assets ratio for the larger sample were then computed for each of these groups. These ratios

are presented in Table XXXIII. By following the ratios in columns, we obtain an idea of the variation of the amount of credit granted according to the size of the store separately for small towns and large cities. Again, by scrutinizing the ratios in rows, we learn how the credit practices differ for stores of the same size according to their location. The high spots of Table XXXIII, which become apparent when the table is examined as described above, are summarized in the two succeeding tables; indicating only the points of maximum and mini-

TABLE XXXIII

RATIOS BY SIZE-OF-ESTABLISHMENT AND POPULATION GROUPS FOR THE PERIOD 1904–1913

Stores	Cities with Population			
	Under 2,500	2,500–100,000	100,000–500,000	500,000 and Over
1. Sales Ratio				
Current assets under $10,000	.078	.066	.059	.062
Current assets $10,000 to 50,000	.137	.071	.064	.097
Current assets 50,000 to 250,000	——	.147	.110*	——
2. Assets Ratio†				
Current assets under $2,000	.077	.054	.068	.082
Current assets $ 2,000 to $ 5,000	.069	.063	.049	.101
Current assets 5,000 to 10,000	.116	.075	.089	.070
Current assets 10,000 to 20,000	.135	.076	.072	.070
Current assets 20,000 to 50,000	.120*	.083	.104	.081
Current assets 50,000 to 100,000	——	.072	.062	.047
Current assets 100,000 to 250,000	——	120	.092	.151*
Current assets 250,000 to 1,000,000	——	——	.127*	.032

* Ratio based on less than 10 store years.

† Based on total stores.

mum, these summaries make the picture somewhat clearer than it appears when we take account of the details.

Isolated Effects of the Size-of-Establishment Factor. An examination of the first summary and of the columns in Table XXXIII must inevitably lead us to the conclusion that the larger the store, the greater is the relative amount of credit it extends, this being true for stores located in inhabited places of every conceivable magnitude, except those in the largest cities (according to the assets ratios for the larger sample). In the analysis by size of establishment where no account was taken of the location of stores, we have also found that the ratio increases with the size of the establishment. It appears thus that the influence of the population factor upon the results produced by the operation of the

TABLE XXXIV

FIRST SUMMARY—HIGHEST AND LOWEST RATIOS FOR EACH POPULATION GROUP

In Cities with Population	The Stores with the Highest Ratios Are Those with Current Assets	The Stores with the Lowest Ratios Are Those with Current Assets
	1. Sales Ratio	
Under 2,500	$ 10,000 to $ 50,000*	Under $10,000
2,500 to 100,000	50,000 to 250,000	Under 10,000
100,000 to 500,000	50,000 to 250,000	Under 10,000
500,000 and over	10,000 to 50,000	Under 10,000
	2. Assets Ratio†	
Under 2,500	$ 10,000 to $ 20,000*	$ 2,000 to $ 5,000
2,500 to 100,000	100,000 to 250,000*	Under $2,000
100,000 to 500,000	250,000 to 1,000,000	$ 2,000 to $ 5,000
500,000 and over	2,000 to 5,000	250,000 to 1,000,000

* Largest or next to largest store found in a city of this size.

† Based on total stores.

size-of-establishment factor is not sufficiently strong to affect the conclusions based upon the preceding analyses.

Isolated Effects of the Population Factor. An inspection of the second summary and of the rows of ratios in Table XXXIII suggests that for all stores, independent of size, the ratio increases as we pass from larger cities to smaller. This, however, does not hold true for the very small stores with assets under $5,000. It is rather interesting, we remark parenthetically, that the extreme classes in both of the classifications should show deviations from the tendency exhibited by the rest of the distribution.

TABLE XXXV

SECOND SUMMARY—HIGHEST AND LOWEST RATIOS FOR SIZE-OF-ESTABLISHMENT GROUPS

Stores with Current Assets	Have Their Highest Ratio in Cities with Population	Have Their Lowest Ratio in Cities with Population
1. Sales Ratio		
Under $10,000	Under 2,500	100,000 to 500,000
$ 10,000 to $ 50,000	Under 2,500	100,000 to 500,000
50,000 to 250,000	2,500 to 100,000*	100,000 to 500,000
2. Assets Ratio†		
Under $2,000	500,000 and over	2,500 to 100,000
$ 2,000 to $ 5,000	500,000 and over	100,000 to 500,000
5,000 to 50,000	Under 2,500	500,000 and over
50,000 to 100,000	2,500 to 100,000*	500,000 and over
100,000 to 250,000	2,500 to 100,000*	100,000 to 500,000
250,000 to 1,000,000	100,000 to 500,000*	500,000 and over

* Lowest population group in which stores of this size are found.
† Based on total stores.

To present the situation in dramatic terms, we might say that the magnitude of the city depresses the ratio—

a tendency which is quite the opposite of the one we found when the ratios for the population groups were compared without taking account of the size of the establishments included in each of the population groups. It appears, therefore, that the influence of the size-of-establishment factor is considerably greater than that of the population factor. Were the stores in each of the population groups of the same size, the ratio would have declined with an increase in the magnitude of the city instead of increasing, as it appears to do in our superficial analysis. The increase in the ratio with the size of the city observed in the analysis by population groups is due, then, to the fact that the proportion of larger stores increases with the size of the city to such an extent as to overcome the mildly, but uniformly, depressing effect of the size of the city upon the magnitude of the ratio.

Limited Market for Jewelry-Store Merchandise in Smaller Cities. The fact that the isolated effects of the population factor are different in the case of jewelry stores from those found in both of the previous studies furnishes a clue to a plausible explanation. While some of the jewelry-store articles are necessaries and conveniences, most of them fall into the class of luxuries. The market for luxuries contracts as a rule more rapidly than population, a statement which could scarcely be made about necessaries or conveniences. The truth of this assertion hinges largely upon the answers to the following questions: Does the proportion of the well-to-do in a city increase with its magnitude (at least until we reach the cities of 500,000 and over), and does the intensity of demand by the well-to-do for articles of jewelry increase with the size of the city in which they live? These questions must on the whole be answered affirmatively. Therefore, the smaller the place, the larger in relation to the extent of the market is a store of a definite size, and the greater is the sales resistance it has to overcome

in order to meet its expenses and to justify its existence from the private profit-maker's point of view as a store of a definite size. One of the means of overcoming sales resistance is selling on credit on liberal terms—a procedure which is reflected by the end of the year in a high ratio of receivables to assets.

Quasi-Instalment Business in Smaller Cities. Another consideration connected with the composition of the sample studied may serve to explain in part why we obtained the results we did and what they mean. The National Jewelry Board of Trade has kept track of all stores reported to be selling at least a part of their merchandise on instalment, and has earmarked these stores as instalment stores. The records for these stores have been subjected to a separate study and are not included in either of the two samples analyzed here. An examination of the distribution of these "instalment stores" reveals that 70 per cent are in cities with a population of over 100,000. That, of course, is far above the percentage of jewelry stores of all descriptions located in large cities. What is the smaller-city counterpart of an instalment jewelry store? It is possible that the demand for jewelry on the part of persons belonging to the same income group is greater in the large cities: that seems to follow from the discussion in the preceding paragraph. Still, this could not account for the entire disproportion found in the distribution of instalment stores. Our guess would be that in the smaller cities relations between the jewelry stores and their patrons are somewhat more informal, loose, personal, and friendly: the purchasers of jewelry are allowed terms which by the length of the time, the small amount of the deposit, and the repayment in small fractions are essentially identical with the system of instalment credit; at the same time, however, this accommodation does not take the legal form of an instalment sale or a lease

contract, is not even called by this name and, hence, can scarcely ever be detected by an organization of national scope, even if the latter inquires explicitly about the reporting store's selling on instalment. This explanation appears still more plausible when we recall that the data analyzed are for the period 1904–1913, a time in which the very term "instalment credit" was known only to the more cultured jewelers of the larger cities. If our sample for the smaller places is less free of stores doing business on a quasi-instalment basis than the sample for the larger cities, this will inevitably produce a higher ratio for stores located in the smaller towns, as compared with stores of the same size in the larger cities.

E. SUMMARY

What are the net results of our survey for the period as a whole? We have found that the stores in the South grant the largest relative amount of credit; and those in the East, the least. This is similar to our findings in the clothing and furniture studies, particularly the latter. Still greater resemblance obtains between the results for the individual cities: in all of our surveys we have noticed New Orleans and Cleveland to have the highest ratios, and New York City to have a uniformly low ratio. In the analysis by population groups, we have come to the conclusion that credit increases with the population of the city in which the store is located, an inference which is analogous to that for furniture stores. This, however, has been modified by a more careful analysis in which account was taken of the influence of the size-of-establishment factor. In comparing stores of the same size located in population centers of various magnitudes, it was discovered that the ratio is related inversely to the population of the city; that is, that, *cæteris paribus*, more credit is granted by small-town

stores than by large-city stores. It is to be observed that the results of the two analyses are not mutually contradictory: in the first, we are dealing with the totality of stores in each of the population groups; in the second, with stores of each typical size treated individually in each of the population groups. The last mentioned conclusion, which is in contrast with the inferences on the same point in our other studies, has been characterized as probably representative of all those establishments which deal in articles of luxury of high value and in which specialization in the cash and credit branches of retailing has gone far enough to affect the situation in the larger cities. Finally, we have classified our stores according to the size-of-establishment criterion and found that the amount of credit granted increases with the size of the store, this being true also when we eliminate the disturbing effects of the population factor. The worth-ratio analyses have thus far been rather unsatisfactory. The variation of this ratio according to geographic divisions did not exhibit any particular regularity; nor did its variation according to population seem very significant when taken in connection with the respective assets ratios. The distribution of the worth ratios according to size-of-establishment permitted us to infer that the increase in the turn-over of capital is concomitant with the increase in the size of the store, when the latter is measured by the volume of current assets.

Outline of the Next Part of the Study. So much for the period as a whole. At this stage, the analysis remains quite superficial. We have not broken up our field of observation into smaller parts in order to see which factors are at work in each one of these parts separately, and thus to establish the degree of homogeneity of these different parts and to test the reliability of the conclusions for the field as a whole. Nor have we investigated

the movements of the ratios from one period to the next for the groups according to various classification principles. In this study, the movements are of particular interest, since they reflect the combined operation of two forces. The first is the long-time factor, which is productive of secular growth or decline. The second is the cyclical factor, of which we have taken account in our classification of years into periods in such a way that, were its influence left undisturbed and supreme, the curve showing the movement of the ratio would be a perfectly zigzag one. We propose, then, to investigate the movements of the ratios in the next part of the study.

3. Changes in Time

A. ANALYSIS BY GEOGRAPHIC DIVISIONS

(Tables XXXVI and XXXVII, Charts 27–29)

Movement of Sales Ratios and Assets Ratios by States. The states can easily be divided into three groups according to the character of the movement of the ratios in time. In the first group we should include all those states whose ratios rise continuously until 1914. These are California, Texas, Virginia, and Pennsylvania. After 1914, the ratios of all these states decline—for some of them moderately, and for others quite considerably. In the second group, with ratios relatively stable until 1923, would come such states as Colorado, Kentucky and Connecticut. The ratios for all the states included in these two groups rise rather steeply from the 1918-1922 period to the 1923-1925 period. In the third group, we should include the remaining two states, Iowa and Indiana. The ratio for Iowa declines from 1900 on, with a marked break in the 1914-1917 period. It keeps on declining after that and does not rise even in the last period. The movement of the ratio for Indiana is still more interesting. In the first place, the secular trend which it exhibits is an almost horizontal one. In the second place, its fluctuations up and down about this trend follow the fluctuations which we have observed

TABLE XXXVI

RATIO BY STATES AND PERIODS

States	1897–1899	1900–1903	1904–1909	1910–1913	1914–1917	1918–1922	1923–1925
1. Sales Ratio							
California	—	.025	.077	.141	.127	.073	.236
Colorado	—	—	.061	.047*	.057	.068	.252*
Connecticuit	—	—	.043	.063*	.066	.028	.114*
Indiana	—	.139	.067	.055	.129	.040	.049
Iowa	—	.163	.077	.068	.104	.061	.074
Kentucky	—	.168*	.062	.077	132	.034	.125
Pennsylvania	—	.051	.056	.107	059	.029	.064
Texas	—	.033	060	127	100	.098	.201
Virginia	—	—	.119	.234	155	.124	.139*
2. Assets Ratio†							
California	.020*	.026	.051	.087	074	.082	.113
Colorado	—	.053*	.058	.066	.057	.048	.192
Connecticut	—	.106	.081	.092	.088	.107	.156
Indiana	.076*	.131	.067	.133	.095	.150	.110
Iowa	—	.148	.076	.076	.091	.088	.068
Kentucky	.097*	.088	.075	.075	.075	.110	.166
Pennsylvania	.025	.053	.061	.086	.045	.048	.073
Texas	.087	.064	.083	.124	.104	.080	.207
Virginia	—	.042*	.104	.133	.198	.116	.239
3. Worth Ratio†							
California	.022*	.029	.073	.118	.092	.111	.182
Colorado	—	.067*	.071*	.079	.064	.058	.228
Connecticut	—	.120	.094	.113	.098	.134	.200
Indiana	.093*	.142	.072	.154	.112	.178	.127
Iowa	—	.176	.094	.090	.107	.105	.091
Kentucky	.103*	.099	.105	.093	.087	.129	.224
Pennsylvania	.028	.087	.075	.111	.051	.058	.092
Texas	.095	.074	.097	.156	.135	.098	.328
Virginia	—	.052*	.145	.206	.280	.206	.437

* Ratio based on less than 10 store years.

† Based on total stores.

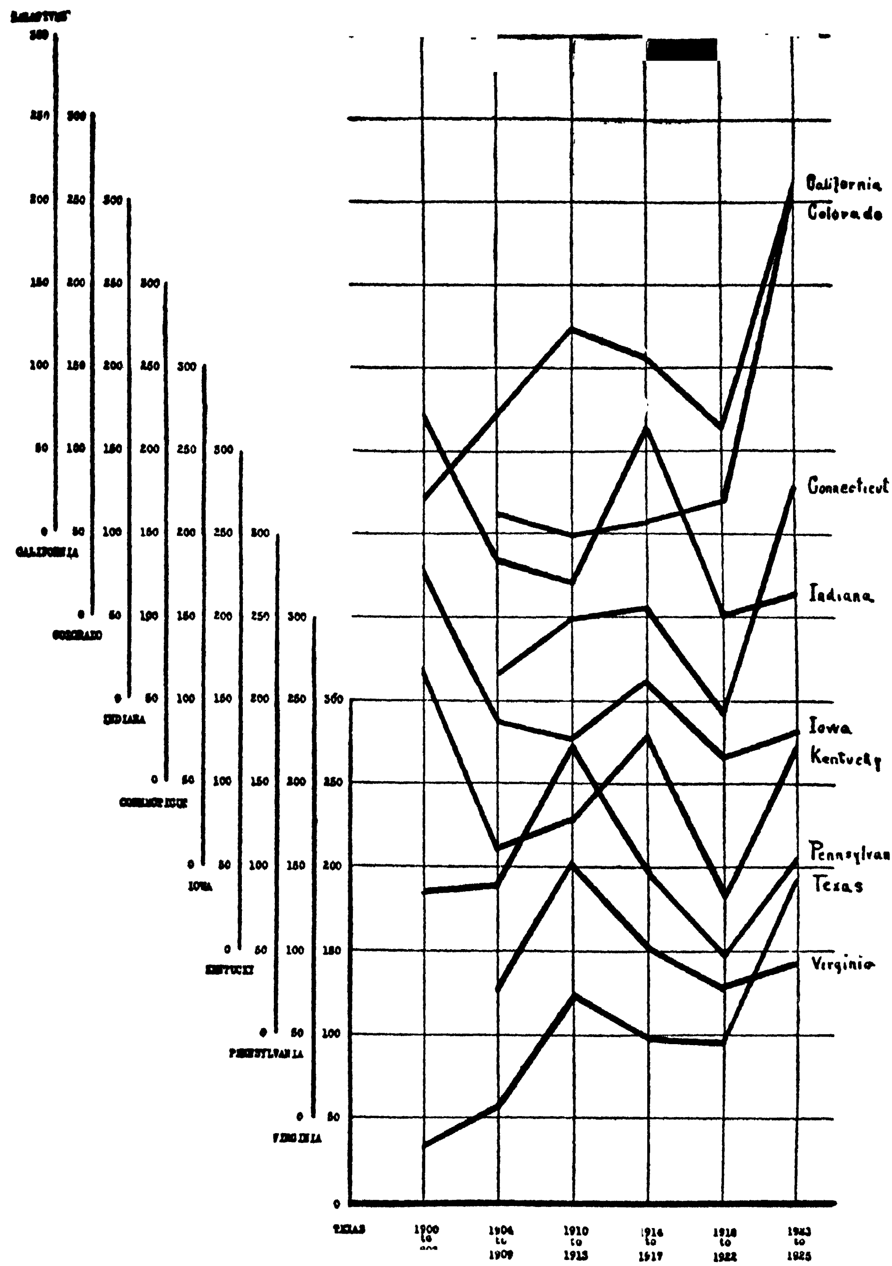


FIG. 27. FLUCTUATIONS OF THE SALES RATIOS BY STATES. BASED ON TABLE XXXVI

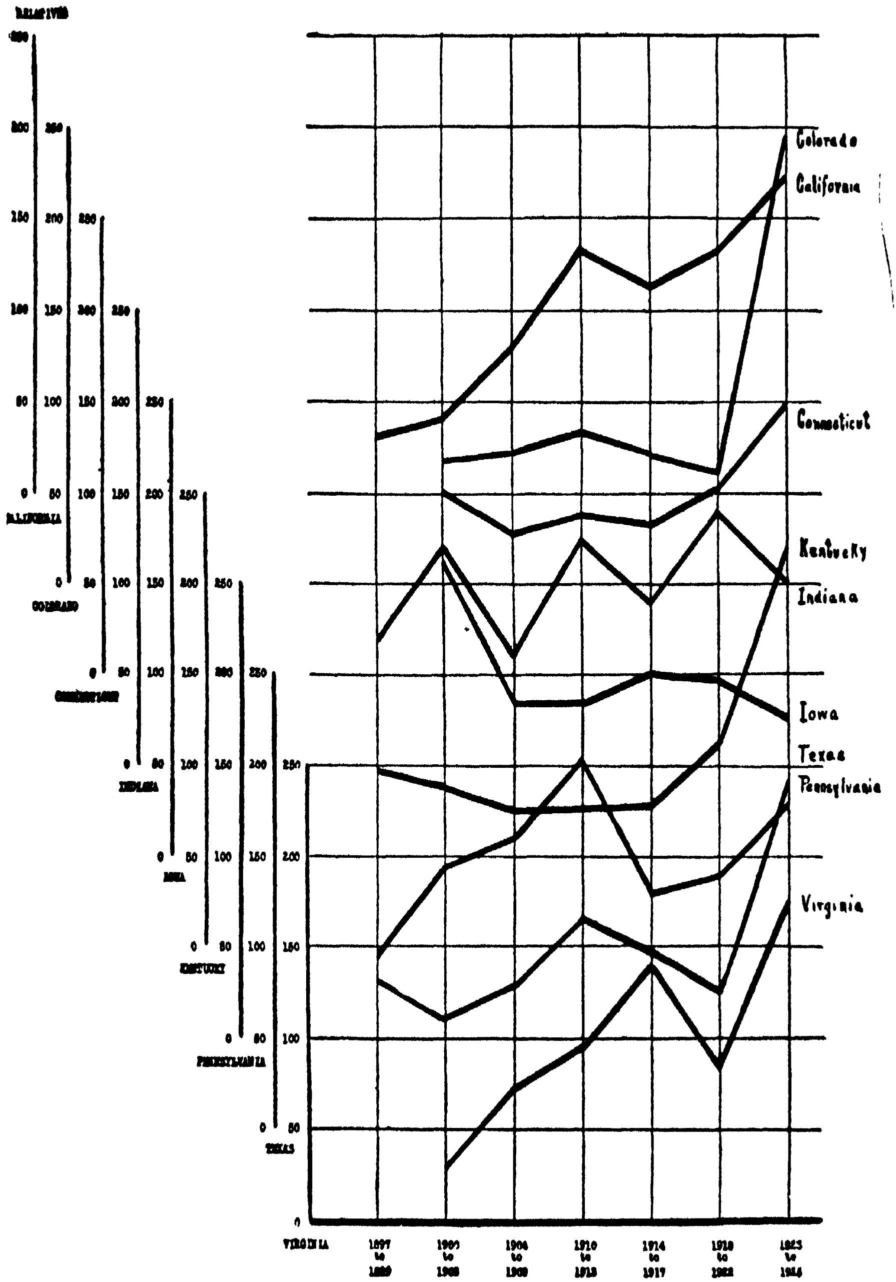


FIG. 28. FLUCTUATIONS OF THE ASSETS RATIO BY STATES. BASED ON TABLE XXXVI

for the country as a whole, and which have guided us in classifying the years into periods. Thus, in Indiana, we find a state which is representative of that portion of the country that has undergone little growth in the last quarter of a century, and in which the influence of the cyclical factors was, therefore, undisturbed and hence quite marked.

Connection of the Increase in the Ratio with the Economic Growth of the Region. The explanation of the enumerated movements of the ratios is rather obvious. The periods 1914–1917 and 1918–1922 excepted, the ratios increase for states which grow and develop; and decline for states which stagnate and do not keep up with the normal increase in population. The reason for not taking account of the fall in the ratios from 1914 to 1922 in this general discussion is not far to seek. It lies in the fact that these years are quite exceptional and marked by the work of disturbing forces of great intensity. The truth of the hypothesis advanced for the remaining years becomes apparent when we compare the groups of states for which the movement was found to be different. Thus in the first group we find such states as California and Texas, whose marked growth is a matter of common knowledge. In the second group we find states whose growth has only recently begun—namely, Kentucky and Colorado. How far the movement of the ratios for Iowa and Indiana would conform to our hypothesis is difficult to say without a careful study of the economic history of these states for the last twenty-five years.

Variability of Ratios for States by Periods and from One Period to the Next. Another measure of growth or stagnation according to this hypothesis is afforded by the coefficient of variation by periods of the ratios for each of the states. When the quotient of the average deviation over the mean of assets ratios (large sample) is

computed for each of the states, we find this coefficient to be highest for the states belonging to the first group, that is, exhibiting the greatest rise in the ratio. This coefficient varies for the first groups of states from .313 to .439, while for the rest of the states (with the exception of Colorado) it is below .250. The variability of the ratio for each of the states from one period to the next could be measured in a similar manner. Instead of taking the average deviation from the mean, we simply take the average of the differences between the values of the ratios in successive periods, when these values are expressed as percentages of the mean for all periods. These average differences for the assets ratio of the larger sample are as follows:

California	.32
Colorado	.44
Connecticut	.21
Indiana	.49
Iowa	.24
Kentucky	.19
Pennsylvania	.39
Texas	.40
Virginia	.52

It will be observed that these average differences are high for all states belonging to the first group. Of the second group, only Colorado has a high index and that is due to the tremendous increase in its ratio from the 1918–1922 period to the 1923–1925 period. Of the third group, only Indiana, with its ratio see-sawing from one period to the next, has a large average fluctuation.

Positions of Individual States in the Distributions for Each of the Periods. A comparison of the distribution of ratios by states in each of the periods is now in order. A preliminary examination of these distributions leads us to observe that Virginia and Pennsylvania, which are the states with the highest and the lowest ratio, tend to

keep this relative position in each of the periods. The same may be said about such states as California, Connecticut, and Colorado, which occupy, on the whole, positions in the middle of the range. A more careful scrutiny of the distributions involves the assignment of ranks to the states according to the magnitude of their ratios and the computation for each of the states of the total shifting in ranks from one period to the next. For the assets ratios based on the larger sample, we find, when the two periods 1914–1917 and 1918–1922 are omitted, that the shifting for the states in the first group is least. This is due to the fact that the ratios for these states are the highest and the lowest; therefore, their position with regard to the average of the ratios for all of the states does not change on the whole from one period to the next.

Dispersion in and Stability of the Distributions for Each of the Periods. Let us now analyze the distribution for each of the periods, as we have analyzed above the distribution for each of the states. In this, we shall be aided by the coefficient of variation as a measure of dispersion and by the index of total shifting between successive periods as a measure of the internal stability of the distribution. The first measure indicates that the dispersion is least in the distribution for 1904–1909 and that it increases thereafter. The total shifting tells us that there was much change from the period 1900–1903 to the period 1904–1909. The change becomes less as we proceed until we reach the period 1918–1922, when the change from 1918–1922 to the period 1923–1925 is very great. This might suggest that perhaps 1923–1925 is not a whole period; that while the years 1923–1925 do not belong to the period 1918–1922, they, in themselves, do not form a stretch of time quite comparable in length and completeness of events to any of the preceding periods.

Sales Ratios and Assets Ratios by Individual Cities. The

sales ratios for all of the cities except New Orleans and New York are based on much too small a number of store years to make their variations truly representative. The assets ratio of the larger sample shows a continuous rise for all of the cities except Kansas City. The movement of the sales ratio for New Orleans is in agreement with that of the assets ratio of the larger sample. For

TABLE XXXVII

RATIOS BY INDIVIDUAL CITIES AND PERIODS

Cities	1897–1899	1900–1903	1904–1909	1910–1913	1914–1917	1918–1922	1923–1925
1. Sales Ratio							
Cleveland	——	——	——	——	——	.190*	.180
Kansas City, Mo.	——	——	——	——	.082*	.074	——
New Orleans	——	——	093*	095*	——	.103	.239*
New York	——	——	.090	079	.063	.053	059
2. Assets Ratio†							
Boston	——	.009*	.003	062	.072	136	.137
Cleveland	——	——	.169	.079	.131	.182	.173
Kansas City, Mo.	——	——	.104	.102	.097	.028	068
New Orleans	——	——	.117	.134	153	.161	.176
New York	.186*	.133	.051	.119	.205	137	.133
3. Worth Ratio†							
Boston	——	.013*	.004	.072	.081	.175	.221
Cleveland	——	——	.204	.090	189	.298	.249
Kansas City, Mo.	——	——	.149	.126	.112	.032	.087
New Orleans	——	——	.127	.181	.212	.291	.276
New York	.222*	.159	.062	.159	.294	.179	.172

* Ratio based on less than 10 store years.

† Based on total stores.

New York City, however, we find that the sales ratio exhibits a decline; while the assets ratio for the smaller sample is stable, with a peak in 1914–1917. The com-

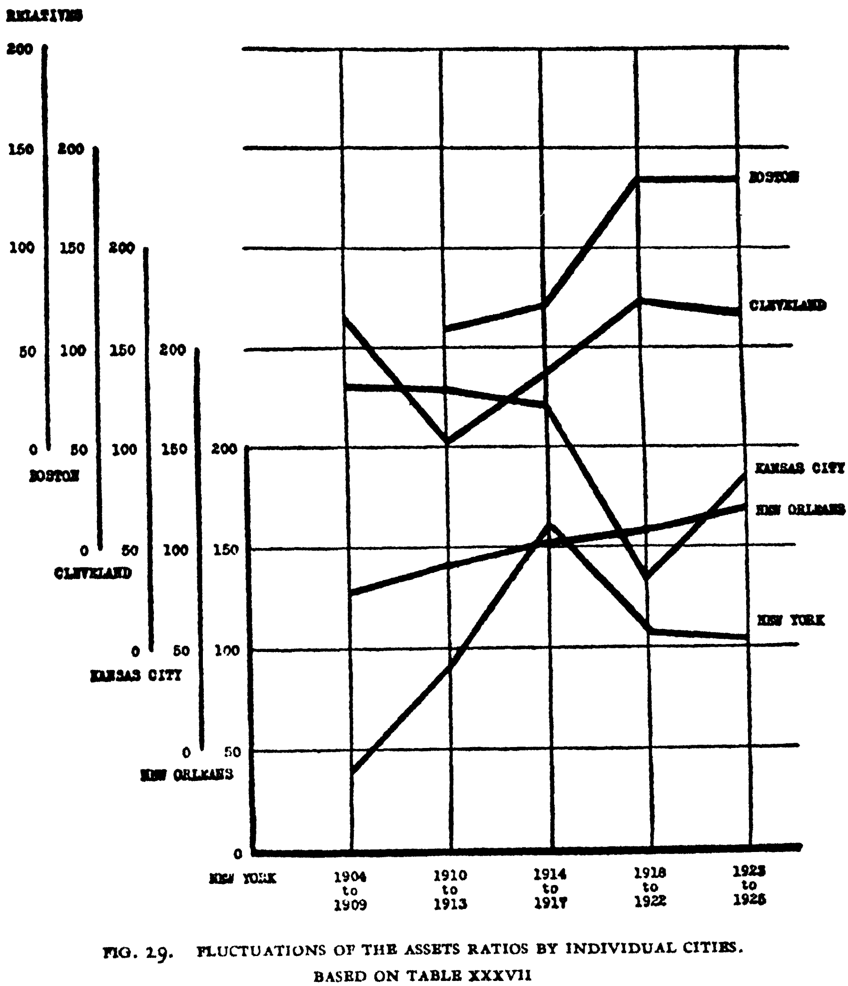


FIG. 29. FLUCTUATIONS OF THE ASSETS RATIOS BY INDIVIDUAL CITIES. BASED ON TABLE XXXVII

parison of the two ratios shows that the turn-over for the New York stores has been increasing. The same increase in turn-over can be observed by a similar comparison for New Orleans. How far this increase in turn-over is general, and how large it is for the various

cities in question, is impossible to say. Hence it is wise not to draw conclusions on the basis of the known movements of the assets ratio for the larger sample.

Worth Ratios by Geographic Divisions. The quotients show an increase for the period covered for all states and individual cities with the exception of Kansas City. The increase is most marked, however, for the states of California, Texas, and Virginia, and for the cities of New Orleans and Cleveland. It will be noticed that all of the states mentioned belong to the first group of states, that is, they represent regions which have undergone considerable growth during the last quarter of a century and in which the relative amount of credit granted, while large on the whole, has also increased most during the same period. This is true of the individual cities also; the increasing extension of credit was accompanied by expansion in borrowing.

Of the movements of this quotient from period to period, that from 1910–1913 to 1914–1917 is interesting: it is a decline for most of the states, and in many cases constitutes the only interruption of the otherwise continuous increase in the quotient. For the individual cities, this movement is a rise rather than a decline; but that was to be expected, since the assets ratios for most of the cities rise during the same period. The movement of the quotient from the 1918–1922 period to the 1923–1925 period consists of a rise for five states. Of these states four experience a corresponding rise in their assets ratios; the fifth, Iowa, is the only one in which the stores go on borrowing to an increasing extent, even without the stimulus provided by greater credit extensions or greater inventories. This confirms our hypothesis regarding a correlation between business stagnation and lassitude in the movements of the sales ratio or the assets ratio: borrowing to keep the business running without any expansion is a sign of dissolution.

B. ANALYSIS BY POPULATION GROUPS

(Table XXXVIII, Charts 30 and 31)

Introductory Remarks: Comparison of the Assets Ratios for the Smaller and the Larger Sample. The assets ratio for the

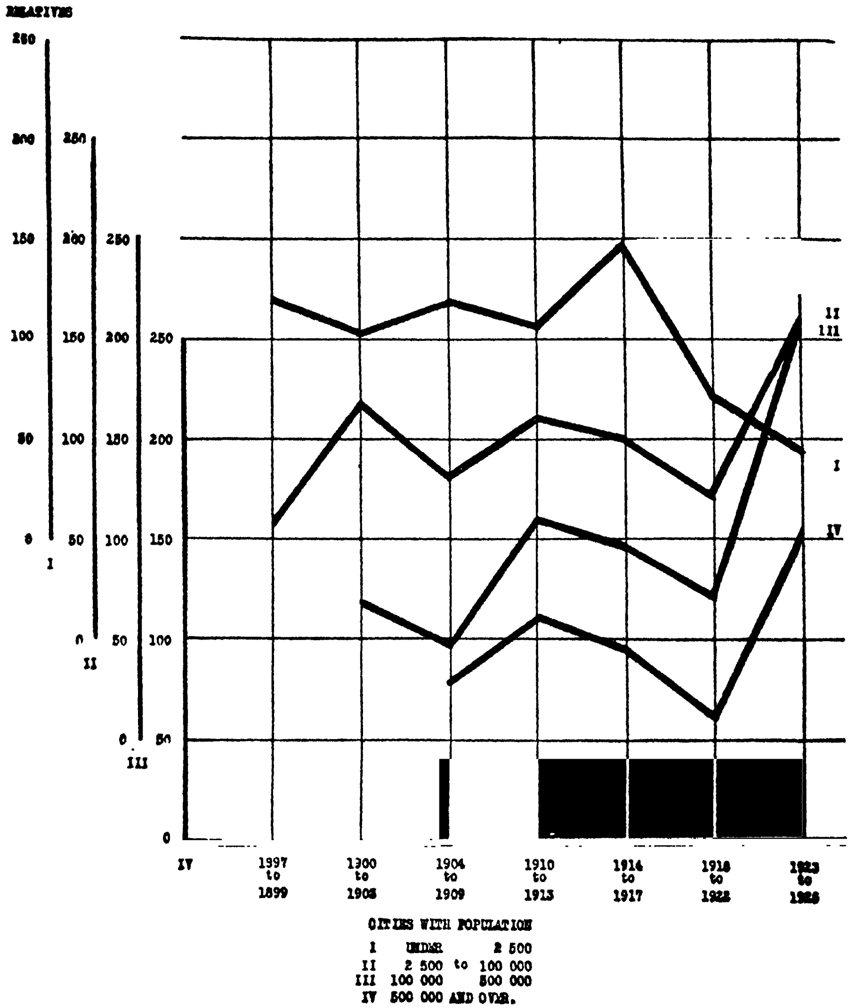


FIG. 30. FLUCTUATIONS OF THE SALES RATIOS BY POPULATION GROUPS. BASED ON TABLE XXXVIII

larger sample is about the same in absolute magnitude as the assets ratio for the smaller sample for the two

lower population groups. The same does not hold for the cities of over 100,000. When the movements in time of these two ratios are compared, we find that these movements are similar both in direction and in relative magnitude (percentage deviations from the mean for the population group being utilized for this purpose) for all the population groups except the highest one. When the population groups are ranked by size of ratio in each of the periods, we find that there is a general agreement between these two ratios for the last three periods only, even this being qualified by the fact that we have to ignore the somewhat exceptional group of cities of 500,000 and over. The upshot of this comparison is that the two assets ratios seem to agree where the number of stores in the smaller sample is sufficiently large to warrant imputing to this sample almost as much reliability as to the larger sample. This provides us with a guide for the interpretation of the results. On the whole, we shall follow the assets ratio based on the larger sample; our conclusions will be somewhat modified by the relation which we shall assume to exist between the sales ratio and the assets ratio—a relation the nature of which we shall learn by comparing the assets ratio for the smaller sample with the sales ratio.

General Trend of the Ratio Movement by Population Groups, with Special Reference to Towns of under 2,500. The movement of the ratio in time is a declining one for the group of towns with a population of under 2,500, increasing for the two middle population groups, and increasing very much since 1900 for cities with a population of 500,000 and over. This is in line with the results obtained in the short-time study of clothing and furniture stores. It points to a considerable difference between the lowest population group and the others. The towns of under 2,500, as we had occasion to state in the previous studies, are trade centers for the surrounding agricultural area,

TABLE XXXVIII

RATIOS BY POPULATION GROUPS AND PERIODS

Cities	1897–1899	1900–1903	1904–1909	1910–1913	1914–1917	1918–1922	1923–1925
1. Sales Ratio							
Population							
Under 2,500	.100*	.085	.097	.089	.122	.061	.038
2,500 to 100,000	.051	.107	.075	.100	.090	.064	.143
100,000 to 500,000	—	.076	051	.126	.110	.081	.238
500,000 and over	—	—	.069	.098	083	.054	.133
reaching 100,000 by 1920	—	—	.027	.163*	.193*	—	—
2. Assets Ratio†							
Population							
Under 2,500	061	128	.100	.110	.116	.046	.048
2,500 to 100,000	.046	.083	.067	096	.080	.090	.118
100,000 to 500,000	048*	.080	.074	.106	.096	.100	.191
500,000 and over	161	.027	029	065	.116	.136	.139
reaching 100,000 by 1920	—	052*	.066	.146	.278*	—	—
3. Worth Ratio†							
Population							
under 2,500	.068	.143	.117	.130	.136	.053	.056
2,500 to 100,000	.052	.094	.080	.125	.100	.117	.162
100,000 to 500,000	.051*	.096	.106	.138	.114	.135	.267
500,000 and over	.190	.038	.034	.075	.144	.179	.199
reaching 100,000 by 1920	—	.061*	.087	.219	461*	—	—

* Ratio based on less than 10 store years.
† Based on total stores.

and their fortunes are closely tied up with those of agriculture. A secular decline in the prosperity of the farmer and in his importance in the economic structure would naturally be reflected in a similar decline in the importance of the small country town. Furthermore,

it was affected by recent developments, such as changes in the type of retailing and the spread of the automobile, which have put the larger towns in quite as intimate touch with the farmer, in spite of the greater distances

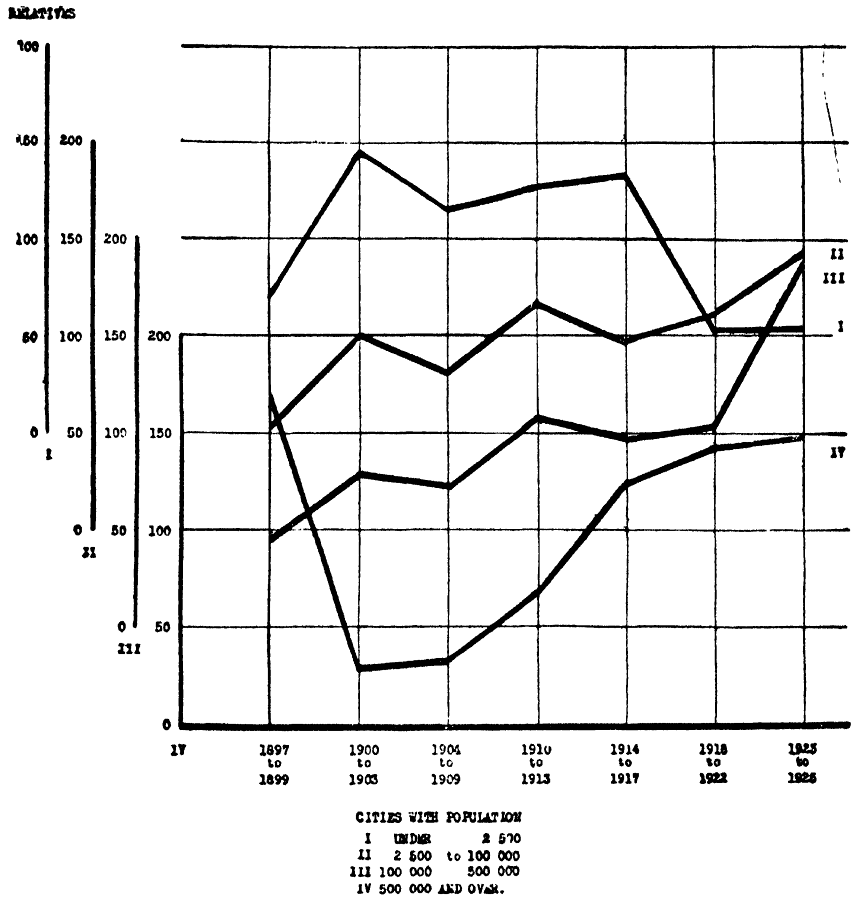


FIG. 31. FLUCTUATIONS OF THE ASSETS RATIOS BY POPULATION GROUPS. BASED ON TABLE XXXVIII

separating them, as the smaller towns previously were. Another factor which may have produced declining ratios for the small town is that all of those small towns that had experienced any growth at all were automatically transferred into the next population group (our

classification by population being based on the 1920 Census); so that in the lowest population group we have small towns that have just been established and those of the small towns that remained stationary in population for a number of years. If our hypothesis as to the relation between the movement of the ratio and the growth of the locality in which the stores are situated is true, the composition of our lowest population group would partly account for the declining secular trend of its ratio.

Detailed Analysis of the Fluctuations of the Ratios for the Lowest Population Group. The fluctuations of the ratio from one period to the next must now be considered in greater detail. For towns of under 2,500, only the larger sample furnishes a complete picture of the movement. The assets ratio for this population group rises slightly up to 1914–1917, when a peak is reached from which there is a steep descent downward to 1925. That the peak was reached in 1914–1917 and that the ratio has been declining ever since then is in accord with the considerations advanced above as to the factors producing the general decline in the ratio for this population group, namely, those descriptive of the changing fortunes of the small town.

Fluctuations of the Sales Ratios for the Three Higher Population Groups. For the other three population groups, the movement of the sales ratio is the same in direction, though not in magnitude. The ratio rises from 1897–1899 to 1900–1903 (for cities with a population up to 100,000; the ratio for the other groups could not be obtained); it falls to 1904–1909; rises again to 1910–1913, and then falls through the next two periods. The ratio rises considerably from 1918–1922 to 1923–1925, this rise being largely responsible for the impression produced by the graph to the effect that the sales ratio is, on the whole, rising for these three population groups. Fluc-

tuations of the sales ratio for these population groups are in agreement with the movement of the ratio for the country as a whole, which served as one of the main criteria in setting up the classification by periods of years; hence the fluctuations in each of these groups are produced by factors common to all of them and, as observed before, reflecting roughly the operation of the cyclical forces in the general business of the country.

Fluctuations of the Assets Ratios Based on the Larger Sample for the Three Higher Population Groups. Let us now compare the movements of the assets ratio for the larger sample with those of the sales ratio for the smaller sample. We find quite a marked agreement between these for the second population group. The only exception is that the assets ratio for the larger sample rises from 1914–1917 to 1918–1922, instead of following the sales ratio in its fall. This is due to an increase in turnover which we have observed before (in the individual-cities analysis) as taking place since the war. It is the same factor which produces the most important disagreement between the movements of the two ratios for the third population group in 1914–1922: the assets ratio of the larger sample is falling but slightly in 1914–1917 and rising in 1918–1922, while the sales ratio of the smaller sample falls considerably through all these years. The movement of the two ratios is entirely dissimilar for cities of 500,000 and over. That is easily accounted for by the small number of stores in the smaller sample and by the fact that the New York stores make up about three-fourths of the total number in the sample. In this case, we are justified, therefore, in paying attention only to the ratio for the larger sample. This ratio has been rising without any interruption since 1900. A comparison of the sales ratio and the assets ratio for the smaller sample indicates that the latter, in its fluctuations, is not significantly different from the former; we take it

to indicate that there has been no important change in turn-over. This comparison lends support to our conclusion based on the assets ratio for the larger sample that the relative amount of credit outstanding by stores in the very large cities has been increasing since 1900.

Sub-Group of Rapidly Growing Cities. Before concluding our study of period-to-period movements, we should not omit to mention the sub-group of cities which reached the 100,000 mark by 1920, but which had a smaller population before that. The assets ratio for the large sample—the small sample dwindles into insignificance for this small sub-group—rises continuously and rapidly from 1900 to 1917, the last year to which our data for this sub-group extend. Let us recall here that the ratios for this sub-group, when not differentiated by periods of years, were also the highest among all the population groups. The most probable explanation of this extraordinarily large magnitude and rapid rise is the fact that the cities in this group have been growing rapidly during the period of time in question. By implication, we are employing here the hypothesis as to the relation of the magnitude of the ratio and the growth of the community catered to by a store, which has done so much service on other occasions. The rapidity of growth comes in here as a factor also in a technical and, for other purposes, insignificant manner—the turn-over in stores located in briskly growing cities should be increasing quite considerably, thus magnifying the rapidity of the rise in the assets ratio. The effect of this factor must be discounted; it would have been eliminated had we been able to obtain a reliable sales ratio to compare with the assets ratio.

Comparison of the Distributions of Ratios in Each of the Periods. Let us now investigate how these period-to-period movements affect the distribution of the ratios by population groups for each of the periods involved.

Comparing these distributions, we find that the ratio for the lowest population group is the highest, or next to the highest, in all the periods up to 1918–1922; and that in the last two periods this ratio is the lowest, or next to the lowest. On the other hand, the ratio for cities of 500,000 and over is the lowest with relation to the ratios for the other groups in all periods up to 1914–1917. After that, the situation illustrated by the larger and the smaller sample is not the same. In the larger sample, we find the ratio for this group to be the highest, or the next to the highest, from 1914 on. For the smaller sample, the sales ratio of this population group continues to be the lowest, or almost so, relatively to the other groups, even after 1914; while the assets ratio is in the middle of the range of the ratios after 1914. Thus the character of the distribution of the ratios is such that, up to 1914, the ratios, on the whole, decline as we pass from the smaller towns to the larger cities; that, in the period 1914–1917, the ratios are high for the lowest and the highest population groups, and lower for the middle range; while after 1918 the ratio rises as we pass from the smaller towns to the larger cities in the larger sample and from the lowest population group to the next-to-the-highest population group in the smaller sample. The situation as characterized here by periods is the obverse of the tendency observed before—that of the ratios for the small towns to decline in time, the ratios for the larger cities to rise, and the ratios for the very large cities to increase considerably.

The Worth Ratio. The quotients of the worth ratios by the corresponding assets ratios (large sample) increase in time for all of the population groups. This increase, however, becomes obviously more pronounced as we pass from lower to higher population groups. For the sub-group of rapidly growing cities, we have only the quotients for two periods for which comparison can

be thought to be reliable: the increase from 1904–1909 to 1910–1913 here is tremendously large. The influence of the size-of-city factor is more obvious still in the movement for the last three periods: from 1910–1913 to 1914–1917, and from the latter to 1923–1925. The change as between the first and second periods of the first pair is a decline for all cities with the exception of the largest; the movement as between the periods in the second pair is an increase proportional to the population of the city. We may end then by restating the conclusion reached in the geographic analysis: not only the extension of credit, but also the employment of borrowed funds (or of merchandise purchased on credit) by retail jewelry stores is correlated on the whole with the rapidity of the development of the locality in which they are situated.

C. ANALYSIS BY SIZE-OF-ESTABLISHMENT GROUPS
(Table XXXIX, Charts 32 and 33)

Introductory Remarks: Comparison of the Ratios for the Smaller and Larger Samples. The analysis by size of store is facilitated by the fact that the ratios for the smaller and the larger sample exhibit an unwonted similarity, both in absolute magnitude and in movement. Thus the average of the assets ratios for the smaller sample is almost the same as the average of these ratios for the larger sample, for each of the groups of stores separately. The movement of the assets ratio for the smaller sample is almost a reproduction of the movement of the sales ratio. The only differences apparently fall in the post-war years and indicate an increased turn-over for all stores with assets of over $5,000. The movements of the assets ratio for the larger sample are similar to those of the assets ratio for the smaller sample, the only differences in direction being found in some of the groups of stores in the years 1897–1903, when the number of stores

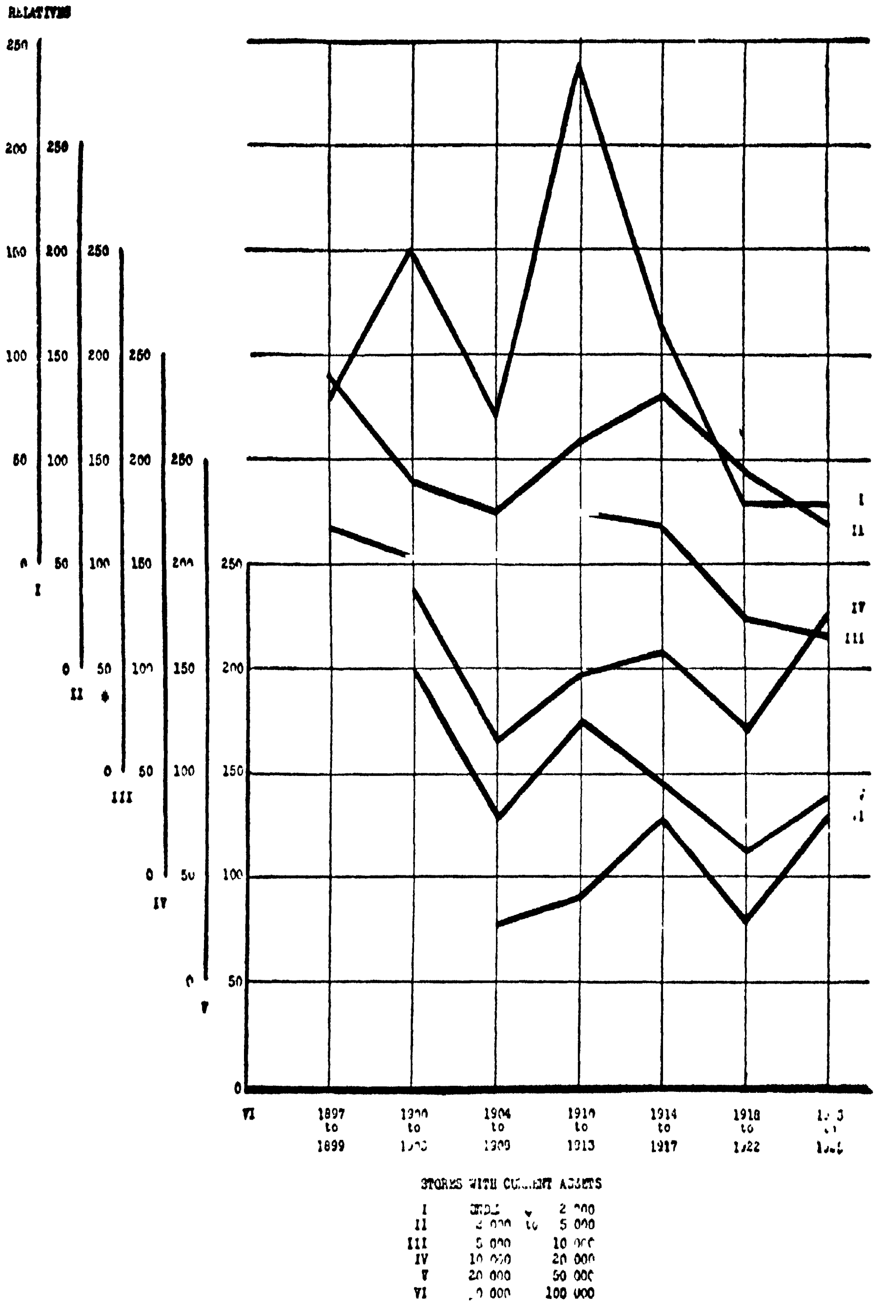


FIG. 32. FLUCTUATIONS OF THE SALES RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS. BASED ON TABLE XXXIX

TABLE XXXIX

RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS AND PERIODS

Stores	1897–1899	1900–1903	1904–1909	1910–1913	1914–1917	1918–1922	1923–1925
1. Sales Ratio							
Current assets under $2,000	035	.066	031	.104	.049	.013	.013
$ 2,000 to $ 5,000	087*	.055	.046	.068	.081	.057	.043
5,000 to 10,000	.074*	064	.065	076	.072	.045	.041
10,000 to 20,000	—	104	.050	.075	.082	.055	.092
20,000 to 50,000	—	141*	.074	.117	.089	.059	.083
50,000 to 100,000	—	—	.108	123	171*	.106	.173
100,000 to 1,000,000	—	—	—	—	.136*	.057	.220
2. Assets Ratio †							
Current assets under $2,000	059	093	.048	083	050	.037	.039
$ 2,000 to $ 5,000	.065	.067	061	.072	.061	.045	.041
5,000 to 10,000	.055	079	.067	092	.080	.050	.063
10,000 to 20,000	080*	119	.072	.088	083	.064	.071
20,000 to 50,000	—	.088	.063	.118	.106	.086	.097
50,000 to 100,000	—	—	082	.045	075	110	.167
100,000 to 250,000	—	—	.069	.144	.095	.088	.185
250,000 to 1,000,000	—	—	015*	.076	127	.179	.185
3. Worth Ratio †							
Current assets under $2,000	070	.106	.060	.102	.060	.044	.049
$ 2,000 to $ 5,000	073	.077	.073	.087	.075	.054	.050
5,000 to 10,000	060	.091	.081	.114	.096	.059	.079
10,000 to 20,000	096*	.145	.086	.108	100	.079	.065
20,000 to 50,000	—	.097	.074	.142	.126	.107	.124
50,000 to 100,000	—	—	.114	.059	.104	.133	.236
100,000 to 250,000	—	—	.102	.210	.126	.125	.253
250,000 to 1,000,000	—	—	.018*	.091	.152	.256	.304

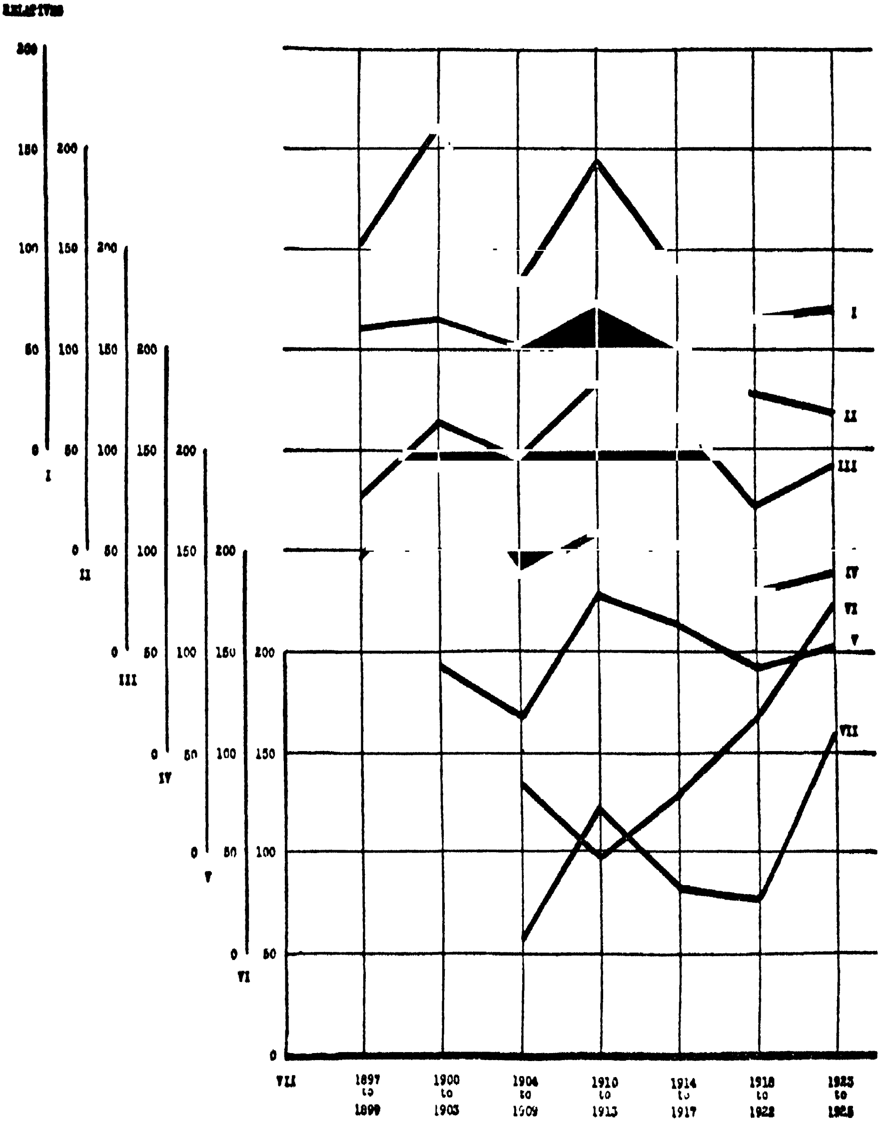
* Ratio based on less than 10 store years.

† Based on total stores.

in the smaller sample is apparently too small to produce reliable results. As one would expect, the fluctuations of the assets ratio for the smaller sample are more violent than those of the same ratio for the larger sample. The difference in the number of stores is again responsible for this discrepancy. Thus there will be no need, in this part of the study, carefully to trace one's way between the larger and the smaller sample. Whatever tendencies are observed here would have a double verification, since there is no significant difference between the smaller and the larger samples.

General Trend of the Ratio Movement. Even a superficial inspection of the movement of the ratio indicates that the amount of credit outstanding for all stores with assets of under $20,000 has been declining in time; that for stores with assets of from $20,000 to $50,000 it has remained stationary; and that for stores with assets of $50,000 and over it has increased. There is nothing surprising about the tendency here described. One would almost expect to find it, after the marked agreement between the results of the clothing and the furniture studies in this respect. The hypothesis advanced there as to the existence of a long-time tendency on the part of the large stores to take up the sale on credit and to use it as a weapon in their competition with the smaller stores, and thus to transform the character of the smaller stores, has found new and striking confirmation in this study covering a stretch of twenty-five years.

Period-to-Period Fluctuations of the Sales Ratios and Assets Ratios for Smaller Stores. The movement of the ratios from period to period is the same for all stores with assets of under $50,000, when reference is made to direction of movement, rather than to the relative magnitude of the fluctuations. It is interesting to observe that the direction of the movement is here the same as that followed by the ratios for all the population groups



STORES WITH CURRENT ASSETS

I		Under	$	2 000
II	$	2 000	to	5 000
III		5 000		10 000
IV		10 000		20 000
V		20 000		50 000
VI		50 000		100 000
VII		100 000		250 000

FIG. 33. FLUCTUATIONS OF THE ASSETS RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS.

BASED ON TABLE XXXIX

except the lowest; it is also in accord with the year-to-year movement found for the country as a whole, which served as the criterion in the classification of years into periods. To be specific, the movement is as follows: the ratios rise from 1897–1899 to 1900–1903; fall to 1904–1909; rise to 1910–1913, which period remains the highest when it is not exceeded by the period 1900–1903; fall to 1914–1917; fall still farther in 1918–1922; and rise in all cases rather slightly to 1923–1925. The violence of the fluctuations is greatest in the group of stores with assets of under $2,000.

Period-to-Period Fluctuations of the Sales Ratios and Assets Ratios for the Larger Stores. The ratios for stores with assets of over $50,000 rise continuously from one period to the next. The only exception is furnished by the group of stores with assets of $100,000 to $250,000, the ratio for which declines from 1910–1913 to 1914–1917 and continues declining to 1918–1922 in a way similar to that observed for all the groups of smaller stores. All of the larger stores show a considerable rise in the ratio from 1918–1922 to 1923–1925. This story of fluctuations brings to mind the hypothesis utilized in the state analysis about the interrelation of the long-time-growth factor and the cyclical-fluctuations factor. Where considerable growth is found, the cyclical fluctuations dwindle in importance or vanish altogether; such has been the case in the larger stores. Where, on the other hand, the situation remains stationary, or stagnation sets in, the cyclical fluctuations are quite impressive.

Comparison of the Distributions of the Several Sets of Ratios and Disqualification of the Assets Ratio for the Smaller Sample. By way of approaching the comparison of the distribution of ratios by size-of-establishment groups in each of the periods, let us observe that while there exists a similarity between the distributions of the sales ratios for the smaller sample and those of the assets ratios for

the larger sample, there is an obvious disagreement between the distributions of the assets ratios for the smaller, and those of the same ratios for the larger, sample. In this case, then, the assets ratio of the smaller sample ceases to be a reliable guide in an interpretation of the meaning of the assets ratio of the larger sample. A comparison of the assets ratio for the smaller sample with the sales ratio indicates that there has apparently been a greater turn-over in the smaller than in the larger stores. It is probable that this result was produced by the fact that our smaller sample is overweighted with small stores in which the receipts for the work of manufacturing and repairing done by the jeweler and his assistants loom large in comparison with the receipts from sales of merchandise; that the jewelry stores of this type should be anxious to indicate the total volume of sales on their statements to a credit-rating agency is obvious. It is thus that the assets ratio for the smaller sample loses its importance for us in this analysis.

Distribution of the Sales Ratios and Assets Ratios by Size-of-Establishment Groups for Each of the Periods Separately. Passing now to an examination of the distributions of those ratios which accurately reflect the situation, we notice that the ratios are increasing for practically each of the periods as we go from smaller to larger stores. For periods previous to 1910 there are no data for very large stores; nevertheless, within the limitations of the material, the highest ratio is found as a rule for the group of largest stores or of those next to the largest. In the period 1910–1913, the distribution is irregular, although stores with assets of from $50,000 to $250,000 show the highest ratio. From 1914 on, the ratio is greatest for the highest size-of-establishment group; in the same period, a secondary peak is exhibited by the ratio for the $50,000-to-$100,000 assets group. The latter group is rather noticeable, since, even for the time

prior to 1914, the ratio for it was in every case higher than those for the contiguous groups of stores. We may conclude, then, that the results of the analysis for the period as a whole have been confirmed by this analysis for separate sub-periods: during the last twenty-five years, the ratio has been, ordinarily, lower for smaller stores and higher for larger stores.

The Worth Ratio. In the analysis for the period as a whole, we have commented on the irregularity of the distribution of worth ratios by size-of-establishment groups. We must repeat here the story of this unfortunate situation with regard to the period-to-period movement of the quotient of the worth ratio by the corresponding assets ratio. Nevertheless, when certain allowances are made and exceptional groups provided for, it can be said that the quotients for the smaller stores increased during the period under consideration; while, for the larger stores, they declined. Just where the line is to be drawn between smaller and larger stores is not quite clear, because the quotient for the \$10,000-to-\$20,000 assets group remains stable until 1923, and then drops considerably; while the quotient for the \$20,000-to-\$50,000 assets group rises plainly most of the time. Again, for the largest stores, the quotient rises considerably in the post-war periods. Yet, by and large, the description above remains true. The increasing employment of credit by smaller stores as shown by the movement of the quotients is a phenomenon which we are not disposed to question: it is consistent with the rest of our notions regarding recent tendencies. It is the other aspect of the movement—the decline in the utilization of credit by larger stores—that seems rather surprising. We are inclined to interpret the figures somewhat differently; it seems to us that they indicate a change in the policy of the larger retailers. While a decade or so ago they relied more upon credit received

from the wholesalers, nowadays they tend to borrow more from commercial banks. These bank loans are reflected in financial statements to a much smaller extent than the credit relations with the trade, for the simple reason that banks insist on a "clean-up" once a year, the time when this wiping of the slate is done being the most propitious one to "close the books" and to prepare balance sheets and financial statements of the kind utilized in this study.

D. SUMMARY

Bringing the time analysis of the survey for the years 1897–1925 to a close, we may summarize succinctly the more important of our conclusions. We have found that the relative amount of credit extended increased most largely in those geographic divisions which have been developing most rapidly, the same being true also of the amount of credit received by the retailers themselves from outside sources. The change in the fortunes of the American farmer brought about by the war and its aftermath manifested itself in the results of our population-group analysis: we have discovered that the relative amount of credit granted by stores in towns with a population of under 2,500 increased until 1917; after which it declined greatly, not recovering its former level subsequently. The increasing occupation of the credit field by larger stores is the most important inference to be drawn from a comparison of the fluctuations of the ratios for small and large stores: while for the former, the ratio declines with the passage of time, it rises for the latter. Moreover, the larger stores go about granting credit in an apparently more systematic fashion: their ratios increase continuously, when those of the smaller stores see-saw, with a tendency to decline. Again, the war period is the turning-point at which the small and the large stores part company: the small stores

have not recovered the ground lost in the decline which began with the 1914–1917 period; while for the large stores, the decline was not so severe and the recovery has been so buoyant as to eliminate all traces of it. In concluding, we may observe that in no case has attention been drawn to any similarities between the results of this study and of the previous studies. Such resemblances exist; but they have been disregarded, or rather reserved for the second part of this investigation, for which comparability with the other surveys is greater and the resemblances more striking. To an exposition of this second part of the jewelry study, we now pass.

THE SHORT-TIME STUDY
(Years 1919–1925)

1. Introduction

Purposes of the Study
Distribution of Data by Groups in Various Classifications

Purposes of the Study. The rationale of the analysis for the years 1919–1925 has been described in the introductory part of this survey. It is, in brief, to provide a study comparable to the studies of clothing and of furniture, to establish the reliability of any inferences relating to the operation of long-time factors which are based on the investigation of the situation in the last five or six years, and, finally, to furnish a more detailed and thoroughgoing analysis of the changes in the post-war years; the importance of the last of these objects may be readily grasped when the purpose of the entire consumers' credit study is recalled. By including the years 1919 and 1920 in the period covered, we have impaired somewhat the comparability with the other studies. Yet in doing so, we have endeavored to deal with a period beginning with a year of great prosperity and ending in the same way, thus presumably guarding

TABLE XL

DISTRIBUTION OF STORE YEARS BY GEOGRAPHIC DIVISIONS

States and Cities	Row*	1925	1924	1923	1922	1921	1920	1919	Total
California	1	47	45	37	39	32	38	65	303
	2	13	12	13	13	12	14	23	100
Colorado	1	8	4	5	6	3	6	9	41
	2	3	1	2	2	—	3	4	15
Connecticut	1	13	24	13	22	12	7	16	107
	2	3	2	2	2	2	1	2	14
Indiana	1	16	25	12	15	15	18	14	115
	2	5	10	5	6	7	9	9	51
Iowa	1	12	16	10	25	19	23	20	125
	2	5	7	5	8	5	6	7	43
Kentucky	1	7	5	8	7	6	7	6	46
	2	4	1	5	2	2	4	2	20
Pennsylvania	1	19	28	24	32	22	18	35	178
	2	5	8	8	13	6	4	13	57
Texas	1	26	19	20	20	29	17	29	160
	2	12	6	9	4	9	11	18	69
Virginia	1	7	5	1	6	9	7	12	47
	2	2	2	—	2	5	4	5	20
Boston	1	20	17	18	17	14	14	8	108
	2	3	—	2	1	1	2	—	9
Cleveland	1	11	17	12	6	11	10	11	78
	2	6	5	4	—	4	2	—	21
Kansas City, Mo.	1	2	8	3	8	9	7	10	47
	2	—	—	—	1	3	2	3	9
New Orleans	1	11	9	7	8	13	12	10	70
	2	3	2	3	1	3	2	2	16
New York	1	112	105	94	87	81	88	65	632
	2	19	22	19	20	17	19	8	124
Total	1	311	327	264	298	275	272	310	2,057
	2	83	78	77	75	76	83	96	568

* Row 1 gives the total number of store years; row 2 indicates the number of store years reporting sales.

TABLE XLI

DISTRIBUTION OF STORE YEARS BY POPULATION GROUPS

Cities	1925	1924	1923	1922	1921	1920	1919	Total
				Reporting Sales				
Population under 100,000	40	41	39	43	40	48	70	321
Population 100,000 to 500,000	9	5	7	6	8	9	9	54
Population 500,000 and over	34	32	31	26	27	26	17	193
				Total Store Years				
Population under 2,500	33	33	20	25	34	31	50	226
Population 2,500 to 10,000	30	40	30	49	35	42	49	275
Population 10,000 to 25,000	17	16	19	18	22	14	16	122
Population 25,000 to 100,000	24	26	15	27	20	26	31	169
Population 100,000 to 500,000	37	37	28	44	37	35	44	262
Population 500,000 and over	170	175	152	135	127	124	120	1,003

TABLE XLII

DISTRIBUTION OF STORE YEARS BY SIZE-OF-ESTABLISHMENT GROUPS

Stores	1925	1924	1923	1922	1921	1920	1919	Total
				Reporting Sales				
Current assets								
under $10,000	34	31	22	23	27	32	47	216
$ 10,000 to $ 50,000	40	36	43	45	43	45	48	300
50,000 to 250,000	8	9	10	7	5	5	1	45
250,000 and over	1	2	2	—	1	1	—	7
				Total Store Years				
Current assets								
under $2,000	27	28	22	19	16	16	20	148
$ 2,000 to $ 5,000	36	47	36	40	42	43	57	301
5,000 to 10,000	64	72	52	63	61	74	83	469
10,000 to 20,000	79	78	73	78	55	54	69	486
20,000 to 50,000	57	62	41	61	65	53	51	390
50,000 to 100,000	25	23	26	24	21	13	17	149
100,000 to 250,000	17	11	9	7	9	9	7	69
250,000 to 1,000,000	6	5	5	5	5	9	3	38
1,000,000 and over	—	1	—	1	1	1	3	7

ourselves from mistaking cyclical changes for long-time tendencies. By doing so, we have also covered the whole post-war period from its very beginning, when certain phenomena which attracted attention only in the later years could be observed in the embryonic stage.

Distribution of Data by Groups in Various Classifications. The number of store years in each of the groups of the various classifications used in the subsequent analysis is shown in three separate tables (XL, XLI and XLII). It will be noted that our classes for stores reporting sales in the population and size-of-establishment classifications are fewer in number and wider in extent than the classes for total stores. We need not expatiate here upon the justification for such a procedure in this case, when the number of store years is too small to be broken up into so large a number of groups as was used in our other studies. Comparability with these latter is not, however, entirely destroyed thereby: our broader groups are in every case co-extensive with two or more of the more minute subdivisions.

2. The Period as a Whole

(Tables XLIII and XLIV)

Pro's and Contra's of the Analysis for the Period as a Whole. It does not seem sensible to begin in the second

part of our study with an analysis for the period as a whole. The purpose of such an analysis is to establish the influence of such factors as regional differences, population, size of establishment, etc., upon the amount of credit granted, without reference to the change in this influence from one year, or one period of years, to another. The longer the period of time studied, the clearer will the nature and magnitude of these influences appear (if any such influence really exists), the freer will our results be from the complicating effect of the peculiarities of certain years or periods. The conclusions of our analysis for the longer period as a whole must, therefore, be taken as providing a truer representation of these influences than could be achieved by studying the period 1919–1925.

However, a superficial examination of the ratios for 1919–1925 as a whole is advisable for two reasons. In the first place, it is interesting to see how far the influences, the existence of which would be suggested by these ratios, are similar to the influences established for the longer period; if there is considerable dissimilarity between the two, some explanation will be called for. Again, the population-group classification used in the short-time study is more detailed than that used in the long-time study, since all those considerations which made impracticable the use of our ordinary population classification in the long-time study did not apply here. Thus, something more is to be learned in this part of the study about the relation between the magnitude of a city and the size of the ratio for stores located in it. Finally, the concomitant influences of the size-of-establishment and population factors upon the magnitude of the ratio have to be ascertained for the post-war years just as they were above for 1904–1913.

Ratios by Geographic Divisions. The distribution of the states by the magnitude of the ratio does not differ here

TABLE XLIII

RATIOS BY GROUPS OF STORES FOR THE PERIOD 1919–1925 AS A WHOLE

	Stores Reporting Sales			Total Stores	
	Sales Ratio	Assets Ratio	Worth Ratio	Assets Ratio	Worth Ratio
Geographic divisions:					
California	147	119	197	099	.144
Colorado	209	202	.237	137	166
Connecticut	.086	080	.108	133	.167
Indiana	025	.058	071	.102	.120
Iowa	069	.072	.091	.087	.107
Kentucky	083	100	124	150	.191
Pennsylvania	041	042	049	059	.074
Texas	.150	.153	208	133	.171
Virginia	107	130	.297	.146	.261
Boston	039*	.088*	118*	.155	.215
Cleveland	183	179	.277	.179	.274
Kansas City	.081	064*	091*	.036	.063
New Orleans	.190	217	.303	.168	.278
New York	060	083	.103	.131	.170
Population groups: cities:					
Population under 2,500				047	.054
Population 2,500 to 10,000				.077	.097
Population 10,000 to 25,000	.081	.093	126	.096	.135
Population 25,000 to 100,000				.120	.165
Population 100,000 to 500,000	164	164	.215	.142	.198
Population 500,000 and over	.098	120	.170	.143	.196
Size-of-establishment groups:					
Stores with current assets					
under $2,000				.037	.046
$ 2,000 to $ 5,000	039	.049	.061	.039	.047
5,000 to 10,000				055	.065
10,000 to 20,000	.070	.077	.100	.067	.084
20,000 to 50,000				093	.117
50,000 to 100,000				.130	.170
100,000 to 250,000	.126	163	.229	.140	.192
250,000 to 1,000,000				.1922	.296
1,000,000 and over	.158*	.171*	.289*	.123*	.156*

* Ratio based on less than 10 store years.

from the one found for the longer period. When the sales ratio is taken as a criterion, the Far Western and Southern states share the largest ratios. The assets-ratio distribution for the larger 1919–1925 sample reduces the position of California to a place fairly near the bottom of the list; the change touches Colorado less materially, with the result that the South is left on top. The states with the lowest ratios are Indiana, Iowa, and Pennsylvania, for both of the samples in this period. The same similarity is found in the ratios for the individual cities, with Cleveland having the highest ratio, New Orleans following a little behind, New York and Boston occupying the middle positions of the range, and Kansas City trailing behind at a considerable distance. The distribution of the quotients of the worth ratios by the assets ratios is practically identical with that established for the longer period. The only important difference is found for Kansas City, for which the quotient is very much higher in the 1919–1925 period. From a comparison of its sales ratio with the assets ratio for the smaller sample, we infer that this is a consequence of overstocking. The number of store years for Kansas City being rather small, we should hesitate to declare this state of affairs to be a permanent and peculiar attribute of stores in this city. We shall, therefore, disregard this dissimilarity as due to accidental causes.

Ratios by Population Groups. The distribution of ratios for population groups is interesting here only for the groups up to 100,000. The tendency for the ratio to reach its peak for cities with a population of from 100,000 to 500,000, and to fall for the very large cities, found for the longer period, is manifested for the shorter period as well; but there is nothing new in that. On the other hand, the tendency for the ratio to increase with the size of the city receives in this case additional and important verification. Instead of one group of from 2,500

to 100,000, we have here three smaller groups, 2,500 to 10,000; 10,000 to 25,000; and 25,000 to 100,000, through all of which the ratio keeps on rising gradually. The comparison of the increase in the worth ratio with that in the assets ratio permits us to conclude that borrowing by jewelry stores increases as we go from the very small towns to cities with a population of from 10,000 to 25,000; the ratio of current assets to current worth remains practically the same for stores in the larger towns. Over 25 per cent of the current assets represent an investment of outsiders in the retailers' business in the larger cities, which is almost double the amount outstanding.

Ratios by Size-of-Establishment Groups. The distribution of ratios by size of store is the same for the shorter period as that found in the first part of the study. The ratios increase with the size of the stores[1] until the largest stores, with assets of over one million dollars, are reached, when the ratio drops from 19 per cent (of current assets) to 12.3. The significance of this drop is to be somewhat discounted, because the data for most of these large stores are for the years 1919–1921. The quotients of the worth ratios by the assets ratios reveal the fact that the relative importance of loans from the outside as compared with the retailers' own capital increases rather slowly with the size of the store; only in the larger stores does the amount borrowed reach one-half of the retailers' own capital. Nevertheless, these amounts remain, for the smaller stores, more than twice as great as the amounts of credit outstanding for the retailers; and in the larger stores, they are but slightly less than double.

[1] A confirmation of this tendency from an entirely independent source is found in the following statement quoted from Bulletin No. 23 of the Harvard Bureau of Business Research, entitled *Operating Expenses in Retail Jewelry Stores in 1919*, p. 25. The statement is: "The common figure for per cent of total sales carried on charge accounts was 35 per cent in stores with business $50,000 or more as compared with 15 per cent in stores with a smaller volume of sales."

A. THE CONCOMITANT INFLUENCES OF THE SIZE-OF-ESTABLISHMENT AND POPULATION FACTORS

Introductory Note. Following the methods of analysis used for the pre-war years and limiting our material here to the years 1919–1925, we now approach the study of the interrelation of the size-of-establishment and popu-

TABLE XLIV

RATIOS BY SIZE-OF-ESTABLISHMENT AND POPULATION GROUPS FOR THE PERIOD 1919–1925

1. Sales Ratios

Stores	Cities with Population		
	Under 100,000	100,000–500,000	500,000 and Over
Current assets			
under $10,000	.038	093	.032
$10,000 to $ 50,000	.078	.068	.057
50,000 to 250,000	.111	.209	.111

2. Assets Ratios†

Stores	Cities with Population					
	Under 2,500	2,500–10,000	10,000–25,000	25,000–100,000	100,000–500,000	500,000 and Over
Current assets						
under $2,000	.059	.026	—	—	.027	030
$ 2,000 to $ 5,000	.035	038	.012*	.012	070	.037
5,000 to 10,000	.054	.059	040	.035	.079	055
10,000 to 20,000	059	.071	.042	.050	078	070
20,000 to 50,000	.034*	.081	.087	.098	.101	.098
50,000 to 100,000	—	—	.059*	.121	.216	.111
100,000 to 1,000,000	—	—	—	.170*	.144	.188

* Ratio based on less than 10 store years.

† Based on total stores.

lation factors in its bearing on the amount of credit extended. The material has been divided and subdivided into classes by a combination of the size-of-establishment and population criteria. The ratios for these classes germane to our discussion are presented in Table XLIV. For a first approximation, the assets ratios for the larger sample are used. The conclusions are checked, so far as possible, by a subsequent reference to the sales ratios.

Isolated Effects of the Size-of-Establishment Factor. Following the assets ratio in the columns of Table XLIV, we observe that no matter what the population of the city is, the ratio for its stores increases from the smaller stores to the larger, so that as a rule the smallest store has the lowest ratio and the largest or the next to the largest store has the highest ratio. Only for towns with a population of under 2,500 do we observe a divergence from this generalization, the smallest jewelry shops in those places having almost as high a ratio as the stores next to the largest. These results are substantially the same as those obtained for the pre-war years, and indicate that there has been no change with regard to the practical independence of the size-of-establishment factor as over against the influence of the population factor.

Net Effects of the Population Factor. The inferences based on an examination of the rows of assets ratios in Table XLIV are somewhat more complicated. For the very small stores, we find that those located in the smallest towns have the highest ratio; the ratios for stores located in other places are almost the same, independent of the magnitude of the city. The stores with assets of from \$2,000 to \$20,000 have the highest ratio when located in cities with a population of from 100,000 to 500,000; yet the ratio next to the highest is met with in these stores when they are located in towns with a population of from 2,500 to 10,000. Stores with assets of from \$20,000 to \$100,000 have the highest ratio in

cities with a population of from 100,000 to 500,000 and the lowest in the smallest towns in which they happen to be located, with the ratio increasing regularly with the magnitude of the city. Stores with assets of from \$100,000 to \$1,000,000 have their highest ratio when located in cities with a population of 500,000 and over; but the ratio is almost as high for the stores situated in the cities with a population of from 25,000 to 100,000, the smallest cities in which such stores happen to be located in numbers large enough to make a statistical analysis possible. It appears, then, that the cities can be divided into two groups, those with a population of under 10,000 and those with a population of 10,000 and over. The ratios for all stores found in the group of smaller cities fluctuate about higher levels than the ratios for stores of the same size in the larger cities. A factor complicating the situation here is that only stores with assets below \$50,000 are found in cities with a population under 10,000, so that the influence of the population factor can be detected only among the smaller stores. Within each of these groups of cities, the ratio increases with the magnitude of the city for stores of the same size; that, of course, holds true for small, as well as for large, stores. Thus we find in the post-war years a phenomenon which is roughly similar to what we described as "the depressing effect of the size of the city on the magnitude of the ratio" in the pre-war years. However, this similarity is very vague; to detect it, we have to divide our cities into two groups instead of the usual six, since with more detailed classification the increase of the ratio with the size of the city within each of these two large groups obscures the similarity. Moreover this disturbing tendency is strongly marked and constitutes a fundamental departure from what has been found to have existed in pre-war years. It is indicative of a significant change that has taken place in the

post-war period, the development of consumers' credit in the larger cities along different lines and for reasons different from those found in the smaller cities and towns. The existence and importance of this change have also been emphasized by the tendency of the ratios on the whole to decline for the small cities and to increase for the large cities from 1897 to 1925.

Attempts at Verification by Analyzing the Distribution of Sales Ratios. For the computation of the sales ratio, we have classified our material into three groups by size of establishment, each of these groups being divided in turn into three sub-groups by population. The use of a small number of groups with wide class limits is necessary to avoid whittling down the number of stores in each of the final groups to a statistically meaningless quantity. The distribution of the sales ratios by these broader classes bears out, on the whole, all of the statements made above. No matter what the magnitude of the city is, the ratio increases with the size of the store. On the other hand, the situation with regard to the location of stores of the same size is not so clear. The lowest population group used in this analysis is that of cities with a population of under 100,000. For stores with assets of under $10,000, the highest ratio is found in cities with a population of from 100,000 to 500,000, the ratios for the smaller and the larger cities being very much smaller and almost the same in magnitude. Stores with assets of from $10,000 to $50,000 show a regular decline in their ratio as we pass from the group with a population of under 100,000 to that with a population of 500,000 and over. Stores with assets of from $50,000 to $250,000 reproduce the distribution we found for stores with assets of under $10,000. We dare not interpret these results except in a negative way, that is, by asserting that they can scarcely be taken as

a refutation of the tendencies established by the analysis of the larger sample.

B. SUMMARY

So much for the period as a whole. The conclusions based on the material for the last six years seem to be completely identical with those relating to the last twenty-five years. With regard to differences between stores in population centers of various magnitudes, our generalizations of the first part of the study have been not only substantiated but also amplified, since a more detailed population classification was feasible. The situation is not quite the same when we come to inferences regarding the concomitant effects of the size-of-establishment and the population factors. This aspect of the first part of our study was not really subject to verification in the second part: in the former we dealt with records for the years 1904–1913, while here we analyzed information for the years 1919–1925. Disturbances of great scope and magnitude occurred between 1913 and 1919; the phenomena investigated could scarcely remain unaffected by these changes. As a matter of fact, it was this very anticipation of differences between the pre-war and the post-war state of affairs that led us to limit the period in the first part of the study to the years 1904–1913. Our expectations have been fulfilled to some extent: we found in the later years a tendency to a bimodal distribution hitherto unmanifested. Before the war, for stores classified by current assets, the relative amount of credit extended diminished with an increase in the population; after the war, the amount of credit was found to be high for stores in cities with populations of from 2,500 to 10,000 and 100,000 to 500,000, and gradually to diminish for the contiguous population groups. The appearance of the new peak for large cities we have taken to be a reflection of a tendency apparent

since the war for the wage-earner of the large city to use a rapidly increasing number of articles of considerable value, jewelry being among them, and to finance this use by obtaining long-time credit accommodations from the retailer or the special credit organization.

The next section of our jewelry survey will be devoted to the more important part of our short-time study, namely, to the analysis of the year-to-year changes in the ratios for groups in the various classifications.

3. Changes from Year to Year

A. ANALYSIS BY GEOGRAPHIC DIVISIONS

(Tables XLV and XLVI, Charts 34–36)

Introductory Remarks: Selection of the Fundamental Ratio. The sales ratios are available for only five out of nine states, and even in these the number of stores in a group exceeds twenty only in one case. Because of this fact, the smaller sample will be utilized only as a supplementary one, with a view to establishing a relation between the movements of the assets ratio and those of the sales ratio. An examination of the figures convinces us that the movements of the assets ratio are not significantly different from those of the sales ratio, so that we can rely upon the assets ratio for the larger sample without any particular misgivings as to the disturbing influence of changes in turn-over. Yet, even in the larger sample, we have not enough cases for Colorado to follow the annual changes in its ratio; and for Virginia, the ratio for 1923 is not available.

General Trend of the Year-to-Year Movement by States. The general character of the change in time for the eight states is roughly identical with the one detected in the preceding part of the study. All of the states which we have combined into the first group, because of a continuous increase in their ratio, have their ratios rising here as well—California and Pennsylvania rather slightly, and Texas and Virginia quite considerably. The states in the second group—those whose increase began only since the war, Connecticut and Kentucky—show a marked rise in their ratios as well. As would be expected, Indiana and Iowa, the states we segregated into

TABLE XLV

RATIOS BY STATES AND YEARS

States	1919	1920	1921	1922	1923	1924	1925
1. Sales Ratio							
California	.039	072	096	.082	.215	.356	.135
Indiana	.050*	.013*	028*	.073*	.024*	.065	.119*
Iowa	.051*	.056*	.054*	091*	.077*	.049*	.102*
Pennsylvania	036	.013*	.005*	030	.040*	.081*	.094*
Texas	.093	.096	154*	.132*	124*	.246*	.196
2. Assets Ratio†							
California	075	.128	068	063	120	.156	.071
Colorado	043*	069*	——	.039*	——	——	123*
Connecticut	134	114*	064	099	.149	.137	201
Indiana	183	061	052	059	.028	138	.122
Iowa	.075	120	048	107	087	050	.074
Kentucky	054*	143*	.226*	104*	.147	.199*	153*
Pennsylvania	.040	072	052	.044	.061	.084	070
Texas	.053	070	096	098	227	.145	.236
Virginia	.082	094*	133*	118*	——	.218*	270*
3. Worth Ratio†							
California	100	.189	.085	081	.121	229	.101
Colorado	050*	.087*	——	.046*	——	——	.142*
Connecticut	.168	.131*	.083	.118	182	176	282
Indiana	.221	072	.063	.073	034	.163	.135
Iowa	.083	.158	.059	119	118	061	.107
Kentucky	066*	.150*	275*	149*	.190*	.278*	.218*
Pennsylvania	056	079	065	053	.087	111	.080
Texas	.067	.089	.117	.118	267	.258	.395
Virginia	.144	.207*	.212*	193*	——	.428*	.457*

* Ratio based on less than 10 store years.
† Based on total stores.

a separate group in the first part of the analysis, show declining ratios, with Indiana again exhibiting forcefully the effects of the cyclical factors upon the fluctuation of the ratio.

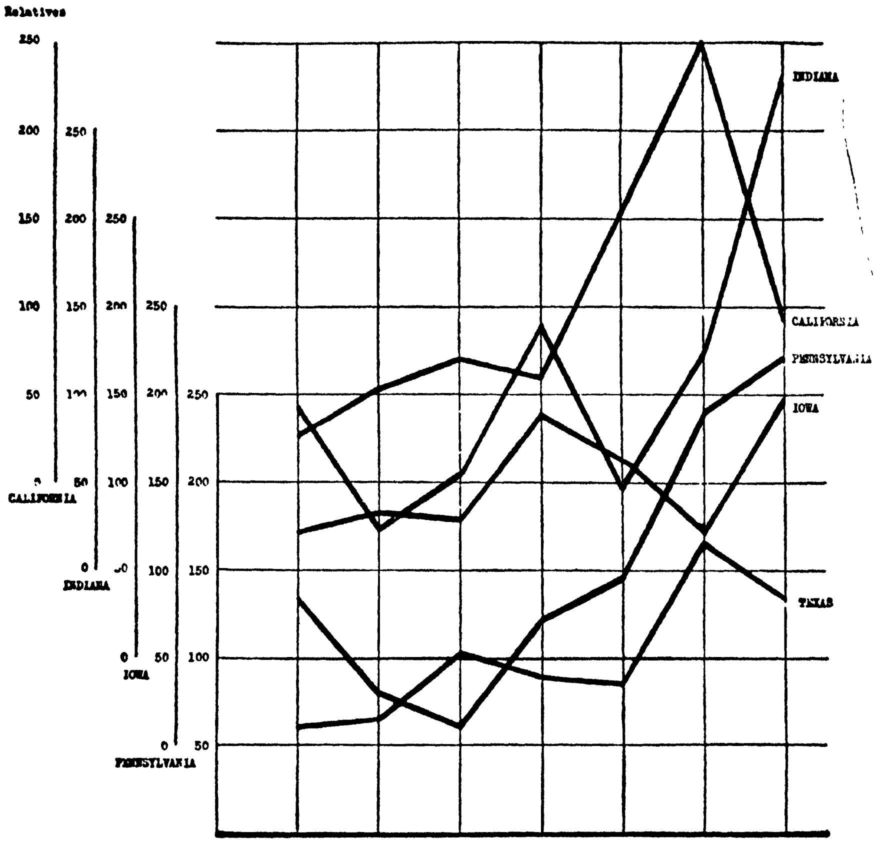


FIG. 34. YEAR-TO-YEAR MOVEMENT OF THE SALES RATIOS BY STATES. BASED ON TABLE XLV

Cyclical Aspects of the Year-to-Year Movement. In following the movements of the ratios in detail, we observe that California, Iowa and Pennsylvania have minor peaks in 1920; the Southern states, Virginia, Texas and Kentucky, have similar peaks in 1921. For the years 1920–1922, practically all of the states (Texas being

the only exception, and even then remaining stationary from 1921 to 1922) show declines, in many cases so considerable as to put the trough of the cycle in one of these years. On the other hand, for the years 1923 or 1924,

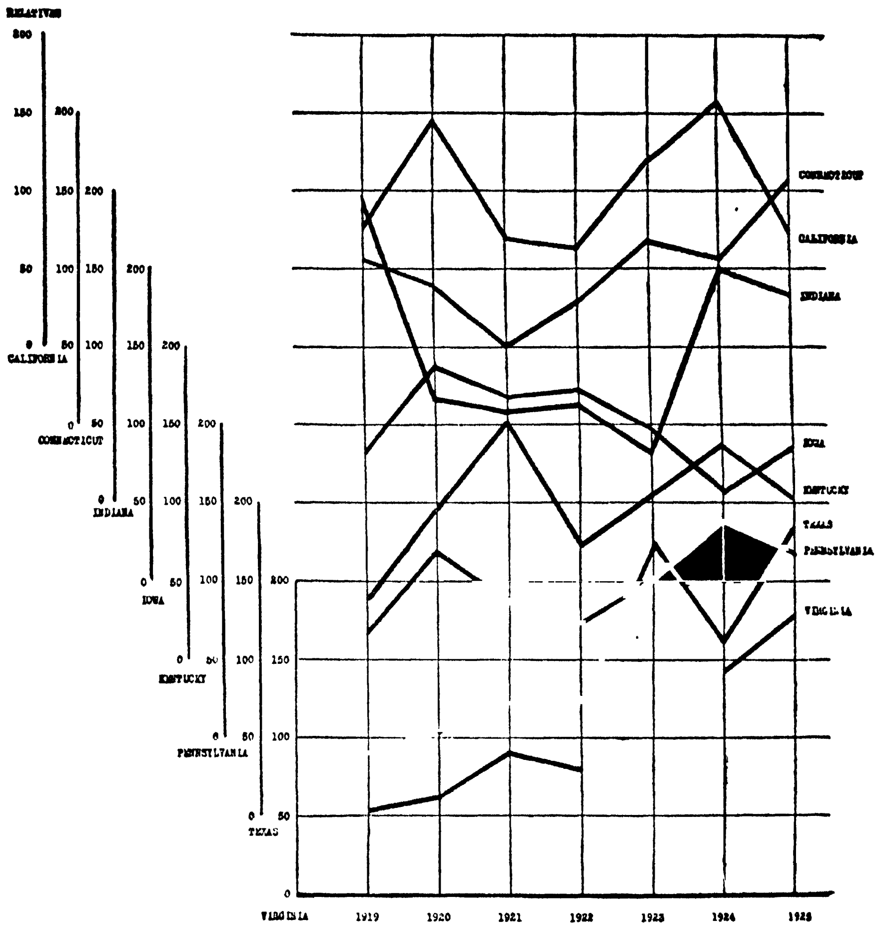


FIG. 35. YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY STATES. BASED ON TABLE XLV

the ratios are high for all of the states except Iowa; for California and Pennsylvania, the ratio reaches its maximum in 1924. As to the movement of the ratio from 1924 to 1925, the states are evenly divided, half of them showing a rise and the other half a decline.

Comparison of the Yearly Distribution of Sales Ratios and Assets Ratios by States. The distribution of the ratios by states in each of the years separately shows considerable irregularity, owing to the fact that the changes in the ratios from year to year, while similar for many of the states in direction, as presented in the preceding paragraph, are quite different in magnitude. The fact that all of the states show definite trends, rising or declining, is again not conducive to the stability of their position with regard to the annual mean for the country as a whole. In spite of all this, definite uniformities can be observed. Among the states for which the sales ratio can be computed, Texas and California (the latter with a large deviation in 1919) have the highest ratio through all the years, and Pennsylvania and Indiana the lowest, leaving Iowa to occupy the place of the golden mean. When the assets ratio for the larger sample is used, Virginia and Kentucky emerge as the states with the highest ratios on the whole, and Pennsylvania and Indiana as those with the lowest, with Texas and California more or less in the middle of the range. The position of Texas is so different here because in the years 1919 to 1922 its assets ratios were low compared to the country as a whole. The backsliding of California in the larger sample has been noted previously and is due, as pointed out, to the greater proportion of smaller stores in the larger sample. It is to be observed that for Virginia and Kentucky the sales ratio was not available; it is quite probable that Virginia would have been the state with the highest ratio in the smaller sample as well, had information been available for it.

Dispersion in the Distribution by Years of the Assets Ratios for Each of the States. A new light is shed on the matter when the ratios are investigated for stability by years for each of the states, and by states for each of the years. The fluctuation of the ratio for a state from year to year

may be due either to a pronounced tendency of the ratio to increase or decline, or to the marked influence of the cyclical factors, or to both. Thus we find, when the mean of the ratios for each of the states is computed and the average of the arithmetic deviations of the ratios for each of the years is related to this mean, that the coefficient of variation thus obtained is highest for such states as Indiana and Texas, with Virginia and California following closely. The coefficients of variation for the assets ratios of the states are as follows:

California	.35
Connecticut	.24
Indiana	.52
Iowa	.22
Kentucky	.27
Pennsylvania	.21
Texas	.46
Virginia	.40

Two Measures of Stability of Position in a Number of Similar Sample Distributions Drawn from the Same "Universe." The stability of the ratio for the state could be investigated, not only with regard to the average for the state, but also when the point of reference is the average of the ratios for the country in each of the years separately. The total or average shifting in ranks for successive years, when the states are ranked in each of the years by the magnitude of the ratio, would measure this kind of stability. It would be measured more accurately by an index of variability computed as follows. The ratios for the states are divided in each year by the mean of the ratios for the country in the corresponding year; then the quotient for each year is subtracted from the quotient for the preceding year; and the differences thus obtained are added (without regard to sign) and averaged. The difference between this measure of stability and that of shifting in ranks is that the former takes account, not

only of the fact of shifting, but also of the precise amount of change from the position in the preceding year. Thus the index of variability is a measure of greater sensitiveness and refinement. No wonder then that, while there is a rough agreement between the results shown by these measures, the index of variability tells us much more than the total or average shifting.

Shifting in the Position of States in Successive Yearly Distributions of the Assets Ratios. The measure of average shifting in ranks indicates that the states at the extreme of the range (Virginia and Pennsylvania) show the least amount of change in position with regard to the average for the country. This is what one would expect, the ratios for these states being so different from the average that they can not by any accidental fluctuation be brought nearer to it. The rest of the states show about an equal amount of variability. If we take the median of the ranks as the dividing line between states with high ratios and those with low ratios, we observe that none of the four states designated above as having the highest or the lowest ratios crosses this line more than once in seven years, which was the very reason why these states were designated as such.

Indexes of Variability of the States in Successive Yearly Distributions of the Assets Ratios. The indexes of variability for the states computed as described above are:

California	.39
Connecticut	.37
Indiana	.57
Iowa	.28
Kentucky	.55
Pennsylvania	.11
Texas	.47
Virginia	.18

States with a low index are those whose ratio changed from year to year to the same extent as the average for

the country. These states are Pennsylvania and Virginia, which have been found to possess a great stability, even with the aid of the less refined measure. On the other hand, Kentucky and Indiana have the highest index, their ratios being very high in 1921 and 1919 respectively, more than double the average for the country, and, in the case of Indiana, lower than the national average in all the other years. The index for Texas is also quite high, since its ratio grows at a much more rapid pace than the average of the ratios for the country. It must be added that the magnitude of the indexes for those states for which the ratio is higher than the average for the country should be to a certain extent discounted, because the differences between the successive years for those states are likely to be greater than for those with a ratio below the national average.

Dispersion in the Yearly Distribution of Assets Ratios by States. The stability by states for each of the years may be analyzed in a similar fashion. Thus, the ratio of the average deviation to the mean may be computed for the ratios by states in each of the years, and the coefficient of variation thus obtained may be taken as a measure of stability or of the relative amount of dispersion in each of the years. These coefficients are:

1919	.41
1920	.27
1921	.42
1922	.27
1923	.43
1924	.28
1925	.44

The alternation of high and low coefficients is interesting; yet it is hard to find any reason for this alternation. On the whole, we observe a tendency of the coefficients to increase very slightly, or at least to remain stationary, a situation which we also found to prevail

in furniture retailing, and which is the opposite of that established for clothing stores. The reasons for the difference between furniture and clothing in this respect have been dealt with above; the same reasons—mainly the fact that, in the former, the extension of credit is a long-established and traditional policy in which the uniformity possible among the various sections of the country had been completely attained long before the period under consideration—would easily explain the similarity between jewelry and furniture, and the difference between jewelry and clothing.

Stability of the Yearly Distributions of the Assets Ratios as Measured by Shifting in Ranks of States between Contiguous Distributions. The difference in the relation of the ratios for each of the states to the mean for all the states in successive years—that is, stability of the distribution of ratios for each of the years taken with regard to the distribution in the preceding year—can be measured roughly by the average of the total shifting in ranks of the states, added up and averaged for periods of two successive years as a unit; and, more precisely, by an index of variability, the make-up of which is similar to that of the one described above. The total shifting is greatest from 1919 to 1920, much smaller from 1920 to 1921, smallest from 1921 to 1922, and exceeds that for 1920–1921 in the three periods formed by pairs of successive years from 1922 on. Comparing this measure with the total shifting computed for the sales ratios in the clothing study[1] we find similarities as well as discrepancies. Both measures point to a relative stability of conditions as between 1921 and 1922, and to a considerable amount of change as between 1923 and 1924. On the other hand, our measure for jewelry stores indicates that the situation in 1923 differed from that in 1922, and that the intensity of change abated but moderately from

[1] See p. 80.

1924 to 1925; while the measure for clothing stores suggests quite the opposite. These differences are probably due to the greater sensitiveness of jewelry, as a luxury, to perturbations in general business conditions.

Stability of the Yearly Distributions of Assets Ratios as Measured by the Index of Variability of the Positions of the States in Contiguous Distributions. Even the measure of total shifting brings out a certain degree of correlation between the stability of general business conditions and the tendency for the sections of the country to retain, with regard to the country as a whole, the position which they occupied in the preceding year. This correlation is more clearly brought out by the index of variability. This index is obtained in the same way as the index for the states, except that the differences between the quotients for the successive years are added up and averaged, not for states as a unit, but for periods of two successive years as a unit. The value of this index is as follows:

1919–1920	.49
1920–1921	.40
1921–1922	.27
1922–1923	.37
1923–1924	.36
1924–1925	.33

The index is very high for 1919–1920, when the revival of buying in 1919 passed into the buyers' strike and the general rough-and-tumble of the "boom" and crisis. The index remained quite high for 1920–1921, when the depression succeeded the troubles of 1920. The index appears to be very low for 1921–1922, reflecting the persistence of the conditions of depression without any significant changes. Again, it is quite high for 1922–1923, when the dawn of a new era of prosperity began to be discernible. It diminished from that time on, mark-

ing a gradual stabilization with slower changes in general business conditions.

TABLE XLVI

RATIOS BY INDIVIDUAL CITIES AND YEARS

Cities	1919	1920	1921	1922	1923	1924	1925
1. Sales Ratio							
New York	.018*	.023	.071	.085	.045	.063	.072
2. Assets Ratio†							
Boston	.192*	.151	.178	137	183	.123	.132
Cleveland	.191	.201	.174	051*	149	.151	.206
Kansas City, Mo.	.036	.055*	063*	.019*	—	.075*	—
New Orleans	.149	.186	156	.138*	302*	.240*	.111
New York	.174	.120	112	.115	.125	.131	.142
3. Worth Ratio†							
Boston	.263*	.191	.218	193	.236	219	.201
Cleveland	.317	.356	.276	062*	.208	.197	.325
Kansas City, Mo.	.046	.079*	.077*	022*	—	097*	—
New Orleans	.214	.636	272	.175*	544	.324*	155
New York	.244	.153	.140	148	158	172	.187

* Ratio based on less than 10 store years.
† Based on total stores.

Sales Ratios and Assets Ratios for Individual Cities. For the individual cities, our study, even for the last six years, does not yield conclusions as definite as could be desired. The number of stores showing sales is too small to be of any use, except in New York City. Yet even this latter is of little comfort here, because the annual movements of the ratios for the two samples are not

at all comparable, although the movements of the assets ratio for the smaller sample are very similar to those of the sales ratio. Even the larger sample, including all stores, does not contain enough to show significant ratios for Kansas City. For three out of the four other cities, the assets ratio exhibits a general tendency to decline, marked most strikingly for Boston, and least for New Orleans: the ratio for Cleveland rises a little from

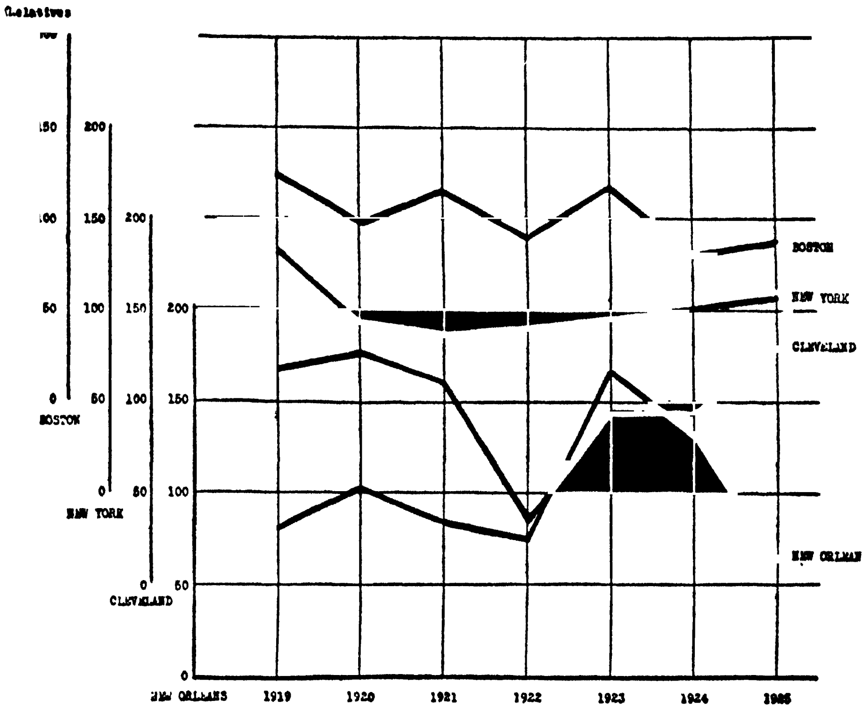


FIG. 36. YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY INDIVIDUAL CITIES, BASED ON TABLE XLVI

1920 to 1925. The fluctuations by years are irregular for Boston, rather small and uniform for New York—a considerable decline from 1919 to 1921 and a mild rise after that—and apparently cyclical in character for Cleveland and New Orleans, especially for the former, with peaks in 1920 and 1925, and a trough in 1922. The distribution

of the ratios of the cities in each of the years separately shows that, on the whole, the ratio for Cleveland is the highest of all, with the ratios for New Orleans, New York, and Boston diminishing in the order mentioned. This is similar to the situation which we have found to obtain for the longer period. The particular stability of the New York ratio is reflected in a small amount of shifting in its position relative to the other cities in pairs of successive years.

The Worth Ratio. There is one more point to be taken up in the analysis by geographic divisions, namely, the movement of the worth ratios. Following our established procedure, we consider here the quotients of the worth ratios over the corresponding assets ratios, since these bring out most clearly what is instructive about the worth ratios. Again, it would perhaps be safer to repeat that we are here dealing with the ratios based on the larger sample. The states can readily be divided into two groups, if the year-to-year movement of the quotients is used as a criterion. In the first group, we place states more or less agricultural in character, such as Iowa, Texas and California. As belonging to the second group of states, predominantly industrial, we may mention Pennsylvania and Indiana. The movement for the first group is a rise from 1919 to 1920, and a decline to 1921 exceeding the rise of the preceding year. After that, there is no similarity in the fluctuations until we come to the years 1922–1923; since that time, the movement is parallel for only two of the states, California and Texas. The quotient for these divisions declines thereafter from 1922 to 1923, increases tremendously from 1923 to 1924, and subsequently drops slightly to 1925. The fluctuations of the quotient for the more industrialized states of Pennsylvania and Indiana are almost the opposite in direction and very much smaller in amplitude. The quotient for these divisions declines from 1919 to

1920, rises to 1921, then (omitting the years for which there is no similarity in movement) declines from 1923 to 1924, the decline continuing with a still greater impetus to 1925. Of the worth quotients for the individual cities, only those for New York and Boston are sufficiently reliable to analyze. The direction of the movement of both of these is the same, while the violence and range of fluctuations are considerably greater for the Boston quotient.

B. ANALYSIS BY POPULATION GROUPS
(Table XLVII, Charts 37 and 38)

Introductory Remarks: Selection of the Fundamental Ratio. To begin with, we must decide which of the samples and, in this connection, which of the ratios, is entitled to claim most of our attention. In this case, the selection is easily made, since, for the smaller sample, a simplified population classification, providing for a single group for all cities of under 100,000 has been used, because of the small number of store years in the lower population groups. Moreover, from an analysis of the smaller sample, it is obvious that the assets ratio follows in its fluctuations the sales ratio closely enough to make their movements practically interchangeable. This permits us to use the assets ratio for the larger sample as a basis for the discussion, without any particular qualifications as to the probable effects of a change in turn-over. Finally, the direction (although not the relative magnitude) of the fluctuations of the sales ratio is roughly the same as that of the assets ratio for the larger sample for the corresponding population groups.

General Trend of the Movement of the Assets Ratios for Each of the Population Groups. Considering, then, the assets ratio of the larger sample, we observe that for places with a population of under 2,500 it declines from 1919 to 1925, and that it behaves in a similar way for the

TABLE XLVII

RATIOS BY POPULATION GROUPS AND YEARS

Cities	1919	1920	1921	1922	1923	1924	1925
			1. Sales Ratio				
Population under 100,000........	.058	.040	.082	.078	.065	.211	.114
Population 100,000 to 500,000....	.071*	.068*	.062*	.129*	.187*	.248*	.265*
Population 500,000 and over.....	.025	.028	.079	.069	129	.119	.156
			2. Assets Ratio†				
Population under 2,500..........	.039	.058	.043	.045	.073	.051	.031
Population 2,500 to 10,000....	.060	.071	.093	.069	.088	063	.107
Population 10,000 to 25,000....	060	.067	080	.061	.051	213	.134
Population 25,000 to 100,000....	.091	.154	.087	071	043	.149	.135
Population 100,000 to 500,000....	.123	.121	102	081	279	.188	140
Population 500,000 and over.....	.170	.147	148	122	.142	.128	.150
			3. Worth Ratio†				
Population under 2,500..........	.047	.067	.051	048	086	057	.051
Population 2,500 to 10,000....	.076	.087	110	081	.117	.085	.144
Population 10,000 to 25,000....	.077	.085	.110	.083	075	.280	249
Population 25,000 to 100,000.. .	.140	.229	.107	093	049	235	163
Population 100,000 to 500,000....	165	.222	.142	.096	.415	.261	.190
Population 500,000 and over.. ..	.235	.195	190	.163	196	.193	.209

* Ratio based on less than 10 store years.
† Based on total stores.

very large cities with a population of 500,000 and over. For all other population groups, it rises, on the whole, during the period in question. So far as concerns the very small towns, this is in line with the tendency found to prevail in the longer period. The explanation should be the same; particularly so because the reasoning in the long-period analysis related mainly to the last part of

that period, which is contemporaneous with the years under consideration here. The situation for the very large cities is rather difficult to explain. We may be permitted to doubt how true altogether is the generalization suggested by the assets ratio. We should bear in mind that over 70 per cent of the stores in this group for

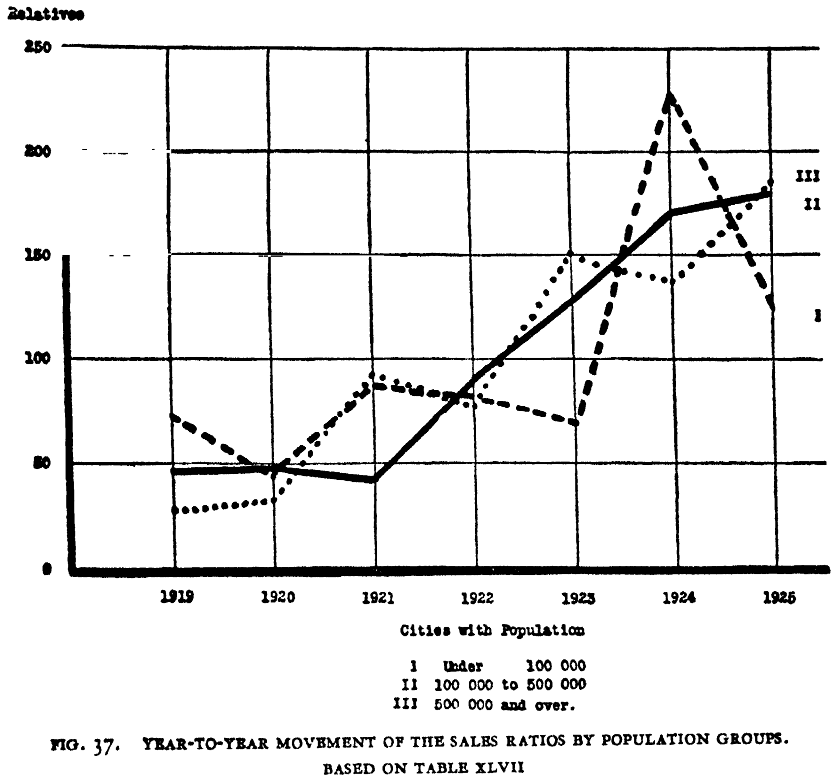


FIG. 37. YEAR-TO-YEAR MOVEMENT OF THE SALES RATIOS BY POPULATION GROUPS. BASED ON TABLE XLVII

each of the years are represented by New York and Boston establishments, the ratios for which have been found to decline during 1919–1925. It is scarcely to be assumed that these two cities, located as they both are on the Atlantic seaboard and in practically the same economic region, are representative of all cities with a population of 500,000 and over. We must also mention the fact that in the smaller sample, somewhat less dominated by New

York and Boston, the sales and assets ratios rise considerably in the period in question. The movement of the ratios for the other population groups is the same as that found for the longer period, and is what one would naturally expect as an accompaniment of normal growth: it calls for no additional explanation.

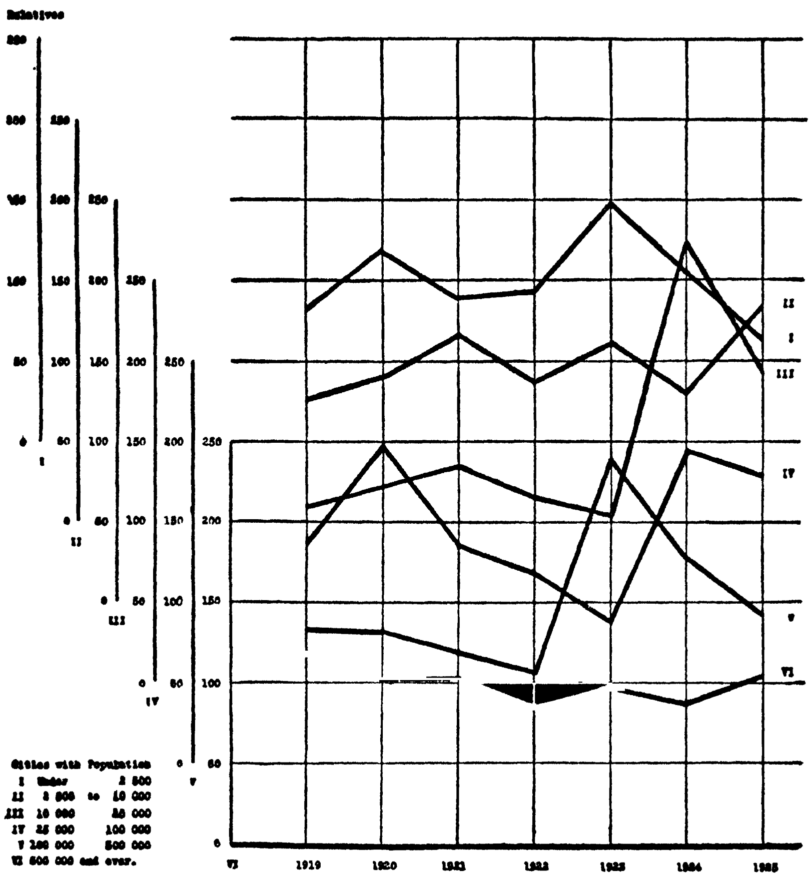


FIG. 38. YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY POPULATION GROUPS. BASED ON TABLE XLVII

Year-to-Year Movements of the Assets Ratios in Detail. The fluctuations by years are similar for all of the cities with a population of under 100,000—a minor peak in

1920 or 1921, a trough in 1922 or 1923, the highest point in 1923 or 1924, and, in most cases, a decline from 1924 to 1925. On the whole, then, this movement reflects the change in general business conditions. In cities with a population of from 100,000 to 500,000, the ratios decline from 1919 to 1922, then almost quadruple from 1922 to 1923, and finally fall through 1924 to 1925 to a level somewhat higher than the 1919 mark. The sales ratio for this group moves in accord with the assets ratio up to 1923, after which it continues to rise, instead of dropping precipitously. Although the ratio for cities of 500,000 and over has been discredited in the preceding discussion, its fluctuations are worth noticing. While the changes from year to year are relatively insignificant and show a regular alternation of rise and fall, the general trend of these changes is a decline from 1919 to 1922, and a rise from 1922 to 1925—a trend similar, at least in its first half, to that found for cities with a population of from 100,000 to 500,000.

Yearly Distributions of the Assets Ratios by Population Groups. The analysis of the distribution of the population-group ratios in each of the years separately has here to be carried on for the larger sample only, since the number of stores in the smaller sample does not exceed ten for any one year for the population group of from 100,000 to 500,000, thus making the whole distribution of the ratios in each of the years unreliable. In all of the years except 1924, the ratios for the larger sample increase more or less regularly with the size of the city, so that the largest or the next to the largest city has the highest ratio. In the year 1924, the distribution of the ratios resembles a normal frequency curve with the highest ratio for cities with a population of from 10,000 to 25,000. This population group is represented in the short-time study by a small number of store years;[1] this

[1] See Table XLI.

number in 1924 is only sixteen, which suggests that perhaps the extraordinary situation in this year is due to an accidental distortion in the composition of this group—a distortion likely to produce disproportionately large effects when the method of aggregates is used.

The Worth Ratio. With regard to the movement of the worth ratios, or rather of the worth quotients, the population groups may be treated in two divisions: that including cities of under 25,000, and that containing the higher population groups. For the former, the quotient drops precipitously from 1919 to 1920, fluctuating in all the subsequent years about the low level of 1920, with upward and downward oscillations succeeding each other rather regularly. For the group of larger cities, the quotient rises from 1919 to 1920 and in some cases to 1921, then drops and continues to fall until the trough is reached in 1922 or 1923, and subsequently attains a new high point in 1924 or 1925. The difference between the two divisions of population groups is probably a reflection of the continuation of the agricultural depression for several years, as contrasted with the more rapid recovery of general commerce and industry. The stores in the small towns found it wasteful to carry large stocks and to pay interest on the purchases to jobbers; while the stores in large cities, observing the existence of a demand for their merchandise, regulated their purchases accordingly. That the latter were overstocked when the crisis occurred and understocked when the revival began is, however, quite obvious.

C. ANALYSIS BY SIZE-OF-ESTABLISHMENT GROUPS

(Tables XLVIII and XLIX, Charts 39 and 40)

Introductory Remarks: Selection of the Fundamental Ratio. The size-of-establishment classification used in the smaller sample provides for a few groups with wide class limits. This has been resorted to in order to make

the results more reliable by increasing the number of stores included for each year in the groups. This procedure, however, lessens, although it does not entirely destroy, the comparability of the results for the smaller

TABLE XLVIII

RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS AND YEARS

Stores	1919	1920	1921	1922	1923	1924	1925
1. Sales Ratio							
Current assets							
under $10,000	.031	.056	.038	.028	029	.037	.049
$ 10,000 to $ 50,000	057	.048	.068	.067	064	.089	.112
50,000 to 250,000	——	.026*	041*	.103*	.174	227*	.274*
2. Assets Ratio†							
Current assets							
under $2,000	036	038	008	.049	.050	.035	.032
$ 2,000 to $ 5,000	025	039	047	.043	038	.050	.032
5,000 to 10,000	.048	074	033	036	.059	.064	.066
10,000 to 20,000	062	.059	058	073	064	.077	.074
20,000 to 50,000	076	098	096	.087	.083	074	.130
50,000 to 100,000	111	094	096	082	.177	.167	.156
100,000 to 1,000,000	.132	186	.182	.155	.199	202	.161
3. Worth Ratio†							
Current assets							
under $2,000	.047	.045	.011	.057	.056	.043	.048
$ 2,000 to $ 5,000	.029	.046	054	.055	.047	.063	.038
5,000 to 10,000	.058	.090	.033	.044	.075	.079	.084
10,000 to 20,000	.078	.070	.071	.092	.082	.097	.090
20,000 to 50,000	.098	.124	.122	.107	.102	.093	.174
50,000 to 100,000	.153	.129	.121	.105	.237	.259	.217
100,000 to 1,000,000	.195	291	.262	.206	.302	.343	.241

* Ratio based on less than 10 store years.

† Based on total stores.

and the larger samples. The broader groups of the smaller sample are coextensive with the sum of two or three of the groups of the larger sample. When the annual movements of the sales ratio are compared with those of the assets ratio for all stores, we find, as a rule, that the movements of the former resemble those of the latter for the sub-group of the largest stores included within the broad group for which the sales ratio is

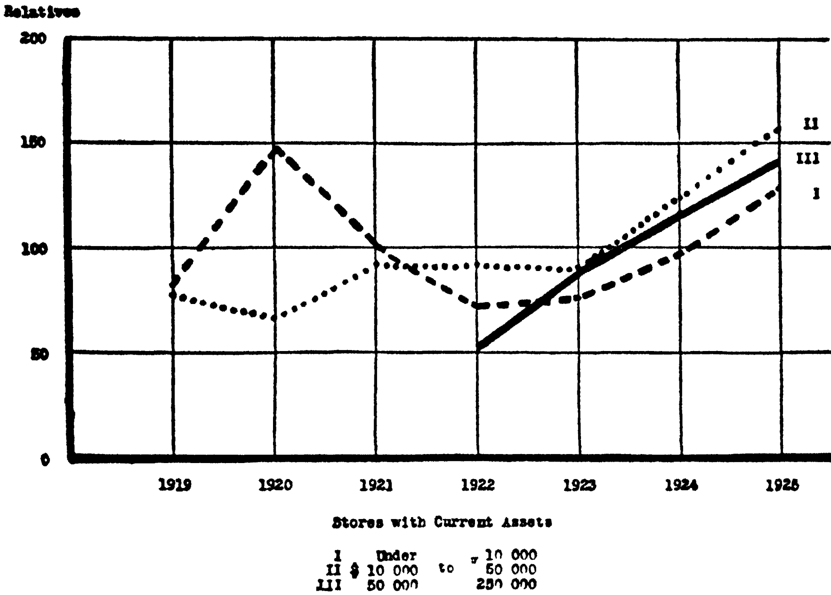


FIG. 39. YEAR-TO-YEAR MOVEMENT OF THE SALES RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS. BASED ON TABLE XLVIII

available. Thus, the movement of the sales ratio for stores with assets of under $10,000 is similar to that of the assets ratio for all stores with assets of from $5,000 to $10,000; in the case of stores with assets of from $10,000 to $50,000, the influence of both sub-groups—those for stores with assets of from $10,000 to $20,000 and of from $20,000 to $50,000—is of about equal weight. We take it that this comparison indicates a genuine similarity between the relative annual fluctuations of

the sales ratio for the smaller sample and of the assets ratio for the larger sample, which enables us to confine our attention to the movements of the ratio for the larger sample only.

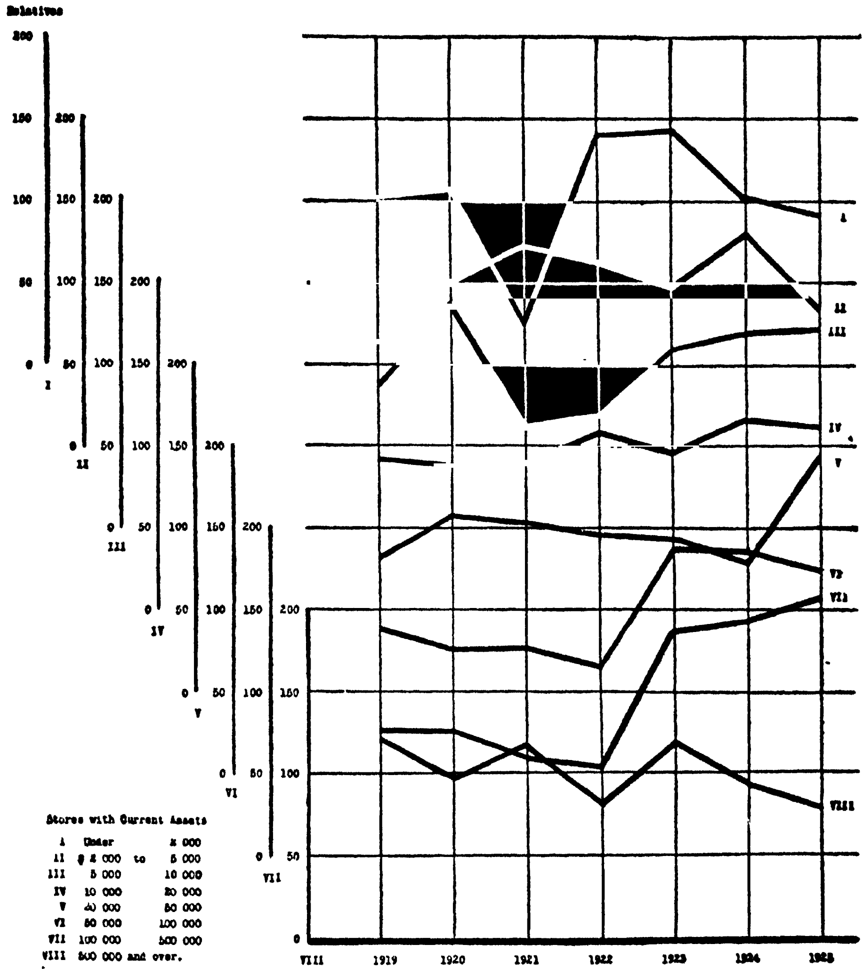


FIG. 40. YEAR-TO-YEAR MOVEMENT OF THE ASSETS RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS. BASED ON TABLE XLVIII

General Trend of the Movements of the Assets Ratios. The general character of the movement of the assets ratios is a rise for all stores with assets of $2,000 and

over. That the ratio for very small stores declined as it did conforms to the observations made for the longer period, and to the conclusions obtained in the other studies. This difference between the change in time for very small stores and the other stores is nothing new and calls for no particular explanation here.

Year-to-Year Movements of the Assets Ratios in Detail. The movement by years seems to be, in the majority of groups, a rise from 1919 to 1920, a fall from 1920 to 1921, and a fall from 1924 to 1925; for the movement in the intervening years, the groups divide into camps of four and three, the ratios for which fluctuate in the opposite directions. The movements for the four groups (which are not necessarily the same in each of the years mentioned) are a fall from 1921 to 1922, a rise from 1922 to 1923, and a further rise from 1923 to 1924. If we take these enumerated movements as typical of jewelry stores, we can say that the fluctuations of the assets ratio for retail jewelry shops conform to the change in general business conditions, as one phase of the business cycle supersedes another.

Fluctuations of the Assets Ratios for Stores Classified by Size and Distinguished by Location in Cities of under and over 100,000. For stores with assets of from $2,000 to $50,000, it has been possible to obtain ratios for groups by size of establishment, with the stores in each of these groups subdivided further into those located in cities of under 100,000 and those in cities of over 100,000. This sub-classification by the population criterion enables us to compare the annual fluctuations of the ratios for stores of the same size in smaller and in larger cities —an opportunity which we have never enjoyed before. The generalization yielded by this comparison is that the smaller the store, the greater the resemblance between the annual fluctuations of the ratio for smaller

TABLE XLIX

ASSETS RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS AND YEARS FOR CITIES WITH POPULATIONS OF UNDER AND OVER 100,000

Stores	Row*	1919	1920	1921	1922	1923	1924	1925
Current assets								
under $2,000	1	042	086†	010	035†	099	036	.027
	2	025†	——	——	.055	.019	.033	.036
$ 2,000 to $ 5,000	1	022	.027	.031	.024	.039	050	.027
	2	028	.046	.057	055	.037	050	.036
5,000 to 10,000	1	053	063	050	038	038	044	.061
	2	042	085	020	035	070	071	.068
10,000 to 20,000 . . .	1	047	.051	032	086	.084	048	.064
	2	075	063	.070	061	053	.094	078
20,000 to 50,000	1	064	119	086	068	062	067	.119
	2	089	078	105	.100	094	080	.139
50,000 to 250,000 . . .	1	——	096	— —	.053†	——	.307†	.149†
	2	.112†	.093	081	081	185	141	.189

* The ratios in row 1 are for stores located in cities with a population under 100,000, the ratios in row 2 are for stores in cities with a population 100,000 and over.

† Ratio based on less than 10 store years.

and for larger cities. Thus the fluctuations of the ratio for stores with assets of from $2,000 to $5,000 and of from $5,000 to $10,000 are similar for the smaller and the larger cities; while those for stores with assets of from $10,000 to $20,000 are opposite in direction and different in relative magnitude for all but one year. This would suggest that a small store is a type of establishment more uniform throughout the country and more independent of location than a large store: the character of the market served by a small store changes only moderately with the size of the city, since it always caters to a limited neighborhood; whereas the market served by a large store, whose patronage is widely scattered in various parts of the city and in the surround-

ing territory, is entirely different for stores located in small towns from that for stores in large cities.

Year-to-Year Movements of the Assets Ratios for Stores Classified by Size and Location. Comparing now the annual fluctuations for stores in smaller and in larger cities, while treating each group of stores by current assets separately, we find that the trend exhibited by the ratios is a rising one for stores in both smaller and larger cities. An examination of the year-to-year movement in detail reveals the tendency for stores in smaller places to have a high ratio in 1920 and 1923, and for stores in larger cities to have peaks in 1921 and 1924. This brings to mind the agricultural theory of business cycles, according to which the effects of the cycle ought to be felt first in agriculture and the lines of business directly dependent upon it, and to be passed on to other industries and commerce in general only after a certain time has elapsed.

Yearly Distributions of Assets Ratios. Examining now the distribution of assets ratios by size-of-establishment groups in each of the years during 1919–1925, we observe that it is the same for each of the years as for the period as a whole. In general, the ratio increases with the size of the store, so that the lowest ratio is shown by the stores with current assets of under $2,000, or $2,000 to $5,000; while the highest ratio is found among stores in the highest or the next to the highest assets groups, that is, among stores with assets of over $100,000. The situation is apparently the same in cities of under and over 100,000: when the stores are segregated by these two major population groups and the separate distributions examined, it is found that both in the smaller and in the larger cities the ratios increase on the whole with the size of store.

The Worth Ratio. The movements of the worth quotients for stores with current assets of over $5,000

follow on the whole the cyclical fluctuations in general business. The quotient rises from 1919 to 1920 and for some stores in 1921, falls then, in most cases rather precipitously, until a trough is reached in 1923, and subsequently recovers a part of its loss in the movements for 1924 and 1925. The movements described are similar to those for stores in the larger cities treated above; the explanation used there is applicable here as well. The movements follow the fluctuations in consumers' demand dependent upon general business conditions: the fact that the movements follow rather than anticipate these fluctuations indicates that there was a temporary maladjustment in the amount of stock on hand at the turning points in 1920 and 1923.

D. SUMMARY

Before restating the results of the short-time study, we must point out the peculiar and somewhat subordinate status of this study as compared with the rest of the jewelry investigation and with the surveys of other retail lines. This study has been undertaken avowedly for the purpose of merely verifying the conclusions of the investigation covering a longer period by a more careful analysis of the material for the recent years, and of providing an analysis comparable to those for clothing and furniture. Because of that fact, our conclusions here should be put in the form of statements of similarities and dissimilarities to the inferences obtained in the preceding parts of the consumers' credit study. Emphasizing the subordinate character of these conclusions is also a matter of caution: the number of store years (for the years 1921 to 1925, for which alone comparison is feasible with the clothing and the furniture investigation) analyzed here is considerably less than in any of the preceding studies.

Turning now to a brief reiteration of our findings, we

may begin with the assertion that no significant deviations from the results of the long-time study have been discovered. In both of these investigations, we have found the South and Far West in the lead as to the relative amount of credit outstanding, and the Middle Atlantic and East North Central regions trailing behind all other sections of the country in this respect. The similarity is perhaps still greater with regard to conclusions as to the differences between small and large cities and between stores of varying sizes: in both cases, it was apparent that the larger the city or the larger the store, the greater is the relative amount of credit outstanding. The changes in time observed for the recent years represent merely a working-out of tendencies, the main outlines of which were discerned in the analysis for the longer period. The amount of credit has been found to increase most markedly in those regions which are developing most rapidly, and to increase less or even to decline for those states or cities which grow at a snail's pace or are showing signs of stagnation. Associated with this tendency, we have observed for both periods a decline in credit for small towns and small stores as contrasted with an increase in credit for large cities and large stores. When examined in greater detail, the fluctuations in all of the classifications were found to follow the oscillations of prosperity and depression in general business.

We have reached the point at which we must terminate our recital of similarities between the two parts of the jewelry study, and turn our attention to the comparison with the other studies. It is particularly apposite to shift our background here, because the tendency described last is practically the first, and surely the most important, case of disagreement between the situation in the jewelry trade and that in furniture. With regard to everything else mentioned above—the ranking

of the regions according to relative amount of credit outstanding, the increase in credit with the increase in the size of city or store, the more rapid growth of credit in larger cities and larger stores—jewelry and furniture are similar. We may lengthen the list of resemblances by mentioning also the absence in both cases of the tendency to an increasing uniformity of credit practices observed in the case of clothing. While the fluctuation of credit extensions in jewelry follows the cycle of general business, that in furniture does not. The reasons for this discrepancy are apparently the same as those which have been stated in the discussion of the differences between furniture and clothing. They consist, briefly, in the longer credit terms customary in furniture and the wider acceptance of credit sales in furniture as the normal merchandising method. In this respect, jewelry is at one with clothing: in both, the fluctuations in the ratios are correlated directly with those in the composite business curve. As a final point, we may mention another feature in which the situations in the jewelry and clothing trades resemble each other and differ from that in the furniture line. This is the amount of credit extended in small towns as compared with larger cities. In both of these trades, the relative amount of credit granted in the small towns and the very large cities is high; at any rate, it is greater than that found for the fair-sized cities. The relation between this phenomenon and the credit needs of the open-country farmer, as well as of the wage-earner in the large city, has been indicated previously. The consideration of the amount of credit extended on purchases of jewelry in large cities has, however, not been completed: we shall deal principally with this problem in the third part of our jewelry study devoted to installment jewelry stores. It is to this last part of our jewelry survey that we now pass.

THE STUDY OF INSTALMENT JEWELRY STORES

1. Introduction

A. THE GENERAL CHARACTERISTICS OF THE INSTALMENT JEWELRY STORE

Specific Features of This Study. At the beginning of this third part of our jewelry study, it is pertinent to set forth the important differences which distinguish it from the preceding two parts. The methods followed are different, the analysis being not so detailed, because of the small number of store years used. Moreover, certain questions are touched upon in this part which it was not possible to take up with regard to the ordinary jewelry stores, because the necessary information was not at the time available. These dissimilarities—in the design, as well as in the meaning and reliability of results—put a stamp of peculiarity upon this study and set it apart from the rest of the jewelry survey.

Definition of an Instalment Jewelry Store. An instalment jewelry store is, according to the definition of the National Jewelry Board of Trade (the source of all our information on the subject), a jewelry retail store which makes it known that it sells jewelry on an instalment plan. The phrase "instalment plan" may not necessarily

be the technical designation used by the store; the essential thing is that the arrangements which it is offering or willing to make with the purchaser are of the instalment type. Again, the store may not necessarily sell all its merchandise on instalment; it may even feature cash sales in preference to sales on instalment.

Geographic Distribution of Instalment Stores. In our study of other lines, as well as in the main jewelry study, the country was divided into nine industrial regions, and for each of these a single state was taken as representative. By utilizing the Reference Book of the National Jewelry Board of Trade compiled in September, 1926, which listed all stores selling jewelry of which the Board knows anything regarding their credit standing, it was possible to ascertain the distribution of instalment stores by these nine regions. A comparison of their distribution with that of ordinary stores engaged primarily in the retailing of jewelry is illuminating. It is presented in Table L:

TABLE L

GEOGRAPHIC DISTRIBUTION OF INSTALMENT JEWELRY STORES, 1926

Geographic Divisions	Instalment Stores Percentage of Total in the Country	Ordinary Stores Percentage of Total in the Country	Percentage of Instalment Stores Greater or Less Than Ordinary Stores by
New England	12.2	6.9	+5.3
Middle Atlantic	29.5	28.3	+1.2
Appalachian	3.6	3.4	+0.2
South East	8.8	7.0	+1.8
South West	5.9	6.2	−0.3
Great Lakes	21.4	18.7	+2.7
Western Grain	8.9	17.4	−8.5
Rocky Mountains	1.3	3.4	−2.1
Pacific	8.5	8.7	−0.2

The proportion of instalment stores is greater than that

of ordinary stores in New England and the Great Lakes regions, and less in the Western Grain and Rocky Mountain regions. It is readily seen that the difference between these two groups of regions is that the first includes states with highly developed manufacturing industries and with a population of which an overwhelming proportion is engaged in manufacturing, commerce, and transportation; while the other group includes states in which most of our vegetable food is grown, with a large proportion of the population engaged in agricultural pursuits.

Distribution of Instalment Stores by Population Groups. That instalment stores have a tendency to flourish in places where there are a great many people with small incomes flowing in at regular and frequent intervals becomes apparent also when we consider the distribution of instalment stores by location in cities of various sizes. For the United States as a whole, this percentage distribution by cities of various sizes according to their 1920 population as given in the Census is presented below:

Cities with a population	
of less than 25,000	7.6% of the total
of 25,000 to 100,000	25.3% of the total
of 100,000 to 500,000	33.2% of the total
of 500,000 and over	33.9% of the total

It is interesting to note, in this connection, that the regions in which the number of stores in cities with a population of over 100,000 exceeds the percentage for the country are:

New England,	with 75.91	of stores in large cities
Middle Atlantic,	with 74.4	of stores in large cities
Great Lakes Region,	with 68.6	of stores in large cities
Pacific,	with 73.8	of stores in large cities

It is obvious that these regions are those in which manufacturing is developed more extensively than else-

where, and in which the population is engaged to a larger extent in non-agricultural occupations.

Distribution of Instalment Stores by Capital Investment. The Reference Book of the Board not only furnishes credit rating, but also classifies the stores listed by the amount of estimated capital. This latter term it defines as "property real and personal, subject to execution, or available to creditors." The distribution of instalment stores by estimated capital is as follows:

capital of less than $4,000	19.8% of total
capital of $ 4,000 to $ 15,000	32.7% of total
capital of 15,000 to 50,000	29.6% of total
capital of 50,000 to 150,000	14.1% of total
capital of 150,000 and over	3.7% of total

Thus, over half of all the instalment stores have a capital of less than $15,000; and over 80 per cent, a capital of less than $50,000. Taken in connection with the fact that two-thirds of the instalment stores are located in cities with a population of over 100,000, this description of the size of a store helps to define quite clearly the type of establishment termed "instalment store." It is true that smaller stores tend to be located in smaller cities; but even of the instalment stores with a capital of under $50,000 over 65 per cent are located in cities with a population of over 100,000, and less than 10 per cent in cities with a population of under 25,000. The percentage of instalment stores with a capital of over $50,000 located in the large cities (100,000 and over) is of course much higher—almost 90 per cent.

Expenses Characteristic of Instalment Stores. In concluding the general characterization of instalment stores, we may quote here the figures for some of the expenses of these stores related quite closely to the proportion of total sales made on instalment. These figures are for the year 1924 only and are based on a rather small

number of reports, so that there may be doubts as to their representative value. Nevertheless, they contribute their share to the composite picture of an instalment jewelry store which we have been attempting to draw. We quote from Table 35 in Bulletin No. 54 of the Harvard Bureau of Business Research.

TABLE LI

EXPENSES OF INSTALMENT JEWELRY STORES, 1924

	% of Total Sales Made on Instalment		
	Less Than 10	10 to 25	25 and Over
Number of stores	31	26	26
Expenses as percentage of net sales			
Advertising	2.7	3.5	3.9
Rent	4.7	6.3	3.7
Total interest	5.1	5.6	5.9
Losses from bad debts	3	3	.8
Stock turn	9	.8	8

B. THE METHODS FOLLOWED IN THE STUDY

Paucity of Data. Turning now to the analysis of the information on accounts and notes receivable for instalment stores, let us observe first that the data are available for a small number of stores only. For a few of these stores, we have records for several years, so that the number of store years is not quite so small. Yet the material covers a long stretch of time, from 1901 to 1925, which renders impossible any cross-classification by years and by several other characteristics, so that the type of analysis followed in the study of the ordinary jewelry stores is out of the question here. Moreover, even when the information is classified by only one of its properties at a time, the number of units in a group is too small to justify the use of the method of aggregates.

Advantages of the Method of Aggregates. The method used in all of our preceding studies was so employed, because it possesses certain valuable advantages. The most important of these is that the base to which the outstandings are related remains, for entire groups as well as for single stores, the total amount of sales or of current assets. If the sample is large enough to be representative of all types of stores and to guard against possible distortion by extreme cases, the ratio obtained can be applied directly to the total volume of sales or of assets for the country, and an estimate of the total amount of outstandings for the United States can be reached. This method, while very simple, permits us to assign weights to each of the stores according to its size, which is important when the changes in the actual volume of outstandings in time, by population groups, by sections of the country, etc., are involved. The second advantage of this method is that, where the number of units analyzed is large, it is far less cumbersome than any other.

Inapplicability of the Method of Aggregates in This Study. It is easy to see that none of these advantages looms large in this investigation. In the first place, large instalment stores located in large cities are heavily overweighted in our sample (as they are likely to be whenever the sample is too small), as compared with the composition of the entire "universe" of instalment stores in the United States. This circumstance by itself would be sufficient to make the method of aggregates inapplicable—the ratio obtained with its aid would not be representative of the totality of the real situation in the country unless there is no difference with regard to the ratio between small and large instalment stores. In the second place, the small number of units used in the analyses minimizes the value of the second advantage.

Method of "Representative Ratio." The method used

here is that of the "representative ratio," as we shall term it for lack of any better name. Ratios are computed for each individual store; out of them one ratio, which is the arithmetic mean, or the median of the ratios, or the median of the modal class of ratios for the group of stores analyzed, is selected as representative of the group. The use of the modal, or the most common ratio, has been avoided; since the range of distribution of the ratios is fairly wide, the same ratio does not frequently occur even so often as two or three times; and when it does so occur, it appears just as frequently in one of the wings of the distribution as in the center of the range.

Ratios Used and Their Significance. In computing the individual ratios, we have confined ourselves to the assets ratio and to the worth ratio, the number of stores showing sales being too small to be of use even in the simplest classifications. In the exposition, the worth ratio is treated in the same way as the assets ratio. Yet the purpose of the treatment is different: it is not to serve as an indication of the amount of credit extended and of changes in this amount, but to tell us something about the arrangements made by stores to finance themselves while they are extending relatively large amounts of credit to their patrons.

2. Analysis by Periods and Years

Ratios by Years. In classifying the stores by years, we treat them by separate years from 1925 to 1919; after that, the number of stores in each individual year drops below 10, and the stores are classified by periods of years, the same as those used in the long-time analysis

of the ordinary jewelry stores. The representative ratios for all the instalment stores by years are presented in Table LII.

TABLE LII

REPRESENTATIVE RATIOS BY YEARS, 1919–1925

Calendar Years	Number of Store Years	Assets Ratio					Worth Ratio*		
		Range of Distribution	Arith. Mean	Median	Median of Modal Groups		Range of Distribution	Arith. Mean	Median
					Classification 10–20	Classification 05–15			
1919	10	.10 to .83	.42	.42	.44	.39	.18 to 1.18	.76	.81
1920	10	.10 to .91	.46	.45	.45	.49	.11 to 1.18	.71	.66
1921	12	.07 to .80	.44	.44	42	.45	.11 to 1.17	.66	.69
1922	13	.18 to .65	.44	.46	46	.48	.24 to 1.16	.71	.73
1923	12	.19 to .85	.40	38	.38	.38	.27 to 1.69	.74	.61
1924	19	.12 to .78	44	.47	.45	60	.14 to 1.55	.69	.68
1925	15	.06 to .75	43	.45	.53	.51	.09 to 1.97	.68	.62

* The median-of-modal-class method is not applicable to the determination of representative worth ratios. The range of distribution of the worth ratios is very wide; their dispersion, even when combined into various groups, is such that no group is distinctly prominent as containing the largest number of cases.

Difficulties of Interpretation Presented by Table LII and the Way of Avoiding Them. A consideration of the representative assets ratios for the separate years from 1919 to 1925 suggests two conclusions. First, it indicates that the fluctuations of the various types of representative ratios are not at all comparable in either direction or magnitude. To choose one of these types as the best and to use it for all of the years would not, because of this very lack of comparability, be warranted, since theoretically one of these typical ratios has about as much right to be considered representative as the others. To consider each year separately and to select

a ratio for it as suggested by the distribution of representative ratios would be quite impossible in some of the years—1925, for instance—and when afterward a comparison of the ratios by years had been instituted, one would not be at all sure that the element of personal bias in the selection of the ratios was not such as to make the fluctuation of the ratios by years conform to some preconceived hypothesis. The second conclusion suggested by the ratios for 1919–1925 will help us out of the difficulty. It is that the ratios fluctuate within a very narrow range, the arithmetic mean only from .42 to .46, and the median from .42 to .47. The quality of the raw material with which we are dealing here is not such as to permit us to put great faith in the differences in the second decimal places in our ratios. The unjustified pretense to precision being set aside, the assets ratios for these years appear practically identical. The nature of the material and of the results obtained from the treatment by years leads us, then, to the conclusion that, owing to the relative stability of the ratios, the analysis by periods of years would be just as significant, and would moreover be erected on firmer foundations. We shall proceed then to obtain ratios by periods of years, identical with those utilized in our study of the ordinary jewelry stores.

Assets Ratio for Instalment Stores and Its Meaning. An examination of the first part of Table LIII reveals that the assets ratio for instalment stores is more than twice that for ordinary jewelry stores. This, taken by itself, is a sufficient reason for treating these stores separately; from the preceding exposition, it is obvious that it is only one out of many reasons. The meaning of an assets ratio of this magnitude in terms of the length of time for which credit is extended could be learned if certain simplifying assumptions were made. We should have to suppose that all of the sales in instalment stores

TABLE LIII

REPRESENTATIVE RATIOS BY PERIODS OF YEARS, 1900–1925

Periods of Years	Number of Store Years	Assets Ratio					Worth Ratio		
		Range of Distribution	Arith. Mean	Median	Median of the Modal Class		Range of Distribution	Arith. Mean	Median
					Classification .10–20	Classification .05–.15			
1900–1903	7	09–.63	.39	.38	—	—	09– .70	.43	.45
1904–1909	12	29– 72	.45	.41	.40	.40	30–1.32	.59	.45
1910–1913	20	.08– 68	.36	33	—	—	11–1.22	.55	.49
1914–1917	27	.14– 89	.37	33	.33	.32	.14–1 34	.65	.63
1918–1922	53	.07– 91	.45	45	.45	.49	11–1 29	.72	.73
1923–1925	46	06– 85	44	45	455	.48	09–1 97	.70	.62

are made on time, and should have to disregard the down payment. We must ignore the existence of a marked seasonal fluctuation in sales and, hence, in the amount of accounts outstanding and of merchandise on hand in jewelry stores, so as to be able to treat the figures which we have as representative of the average situation during the year. Again, we have to take the relation of sales to current assets, established on the basis of information for a few stores, as typical for the trade as a whole. If annual sales are about 1.25 times the current assets, then the assets ratio of .45 is equivalent to a sales ratio of $45 \div 1.25$ or .36. Using the formula for transforming the length of time for which credit is extended into the average percentage of the total amount of credit outstanding at any one time,[1] we derive the length of time for which the credit must have been extended if 36 per cent of it is outstanding on the average. Thus $(x+1) / 24 = 36; x = 7.64$. Seven

[1] See Vol. I, p. 288.

and a half months is, according to this estimate, the average maturity of instalment credits in jewelry. Because of the nature of the assumptions made, this is decidedly an underestimate: not all of the merchandise, even in instalment stores, is sold on credit; and, again, the down payment, no matter how small, is at least 10 per cent. If we assume that only 90 per cent of all sales are made on time and that the down payment is 10 per cent, the length of maturities indicated by an assets ratio of .45 is over nine and one-half months. Such an interpretation of the ratio, while conjectural and uncertain, is still worth while as enabling us to get a glimpse of the general outline of the situation which is reflected at the end of the year in a ratio of this particular magnitude.

Movement of the Assets Ratio by Periods. The movement of the assets ratio in time reduces itself to a slight rise from 1900–1903 to 1904–1909, a considerable fall in 1910–1913, at which level it remains until the close of the war. Since 1919, the ratio has again been higher, higher than it ever was before. Thus the trend for the last twenty-five years, if it is permissible to speak of this on the basis of so scanty an analysis, has been a rising one. It is the same, then, as that which we found to obtain for ordinary stores for most of the states, except that for instalment stores the tendency to rise is rather mild. For the movements from period to period, the two types of jewelry stores again do not quite agree: in the regular stores, the ratios fall from 1913 to 1922, while for the instalment stores the ratios are low in the period 1910 to 1918. So far as can be ascertained from the small number of records showing sales, the increase in turn-over (if any) has taken place in the instalment stores only since the war, and has not been large enough to result in an increase in the assets ratio. Thus a rise of the latter is a genuine index of the tend-

ency to grant more credit or to lengthen the time for which credit is extended.

Movement of the Worth Ratio by Periods. The worth ratio rises throughout the period covered much more than the assets ratio. The rise is uninterrupted until 1923, when a slight falling-off becomes noticeable. The rise of the ratio, so far as it was greater than the rise of the assets ratio, indicates, of course, that the borrowed funds represented a continuously increasing proportion of current assets. The fact that in the period 1918–1922 the worth ratio reached 70 per cent shows that, in spite of long terms and a large proportion of credit sales, the proprietors of instalment stores financed out of their own capital only a minor part of the credit which they were granting. The meaning of the fall in the ratio in 1923–1925 can not be certain within the limits of this investigation, yet the possibility of a connection with the growing respectability of instalment selling and with the consequent infusion into this field of a number of establishments standing financially on their own feet might be at least suggested.

3. ANALYSIS BY SIZE-OF-ESTABLISHMENT AND LOCATION

A. SIZE OF ESTABLISHMENT

Feasible Methods of Analysis. The next important question which can be settled by using the available material is the relation between size of establishment and amount of credit extended. There are many ways in which information of this character could be elicited. We could classify all our store years by size of establishment and obtain a representative ratio for each group. To satisfy those who claim that a store of a certain size meant two different things in 1901 and in 1925, we might confine the information utilized to the years 1919–1925. When this limitation is imposed, we must be careful to separate all those store years that make up the record of a single store in a number of consecutive years and to assign to all of them the weight of a single store. Finally, we might follow methods which would obviate, so far as possible, the influence of the geographic or time factors and enable us to deal with the isolated relation between the size of the establishment and the size of the ratio. Thus, for each of the cities, we might follow the movement of the ratio as we pass from smaller stores to larger ones, and on the basis of the majority of cases establish the relationship sought. In the same way, we could plot the ratios by years for stores classified by size; and by ascertaining the levels about which the plots oscillate, establish also which stores have on the whole higher ratios and which lower. By following the latter method, we could also locate the time trends of the ratios for stores classified by size, a fact which is significant in itself and by comparison with the secular trends established for ordinary jewelry stores.

Assets Ratios by Size-of-Establishment Groups for Store Years. The representative assets ratios for store years classified by size of establishment, when all store years

TABLE LIV

ASSETS RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS, 1900–1925

Stores	Number of Store Years	Representative Ratios			
		Arith. Mean	Median	Median of Modal Classes	
				Classification .10–.20	Classification .05–.15
Current assets under $10,000	25	.36	.38	.37	.39
Current assets $ 10,000 to $ 20,000	23	.37	.29	.25	.25
Current assets 20,000 to 50,000	37	.43	42	.435	.445
Current assets 50,000 to 100,000	20	42	46	.50	.49
Current assets 100,000 to 250,000	39	42	.44	.44	.45
Current assets 250,000 to 500,000	13	53	.48	48	.48
Current assets 500,000 and over	2*	.46	—	—	—

* This is the number of stores, not store years, one New Orleans store for which data are available for 7 years has been given the same weight as the only other store in the group, which has a statement for one year only.

from 1901 to 1925 are utilized, are presented in Table LIV. The group of stores with assets of over $500,000 being left out of consideration, since the number of stores in it is too small to make the average ratio reliable, we may observe that the ratio shows a tendency to increase with the size of the store, irrespective of the type of representative ratio utilized. The rise in the assets ratio is irregular and uneven, interrupted by declines here and there, yet the general tendency to rise is obvious.

Assets Ratios by Size-of-Establishment Groups for Stores. The representative assets ratios for *stores* classified by size, when only the data for years 1919–1925 are utilized, are presented in Table LV. The distribution of ratios in this table points again to the same tendency of the ratios to rise with an increase in the size of the store.

TABLE LV

ASSETS RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS, 1919–1925

Stores	Number of Stores	Arith. Mean	Median
Current assets under $10,000	8	.33	.385
Current assets $ 10,000 to $ 20,000	6	.38	.25
Current assets 20,000 to 50,000	9	37	.38
Current assets 50,000 to 100,000	5	46	.53
Current assets 100,000 to 250,000	14	42	.44
Current assets 250,000 to 500,000	6	54	.585
Current assets 500,000 and over	2	46	—

Owing to the smaller number of cases, the tendency here is still less clear-cut than in the preceding table.

Method by Which the Influence of Extraneous Factors Is Eliminated. The reliability of the conclusions drawn from the tables is considerably increased by a more detailed analysis in which account is taken of factors extraneous to the relation between the size of the store and the magnitude of the ratio. In the following discussion, we attempt to eliminate the influence of the location of the store, as well as that of the particular time to which the data relate. This is done by a method the essential features of which must be explained in order to permit the reader to appreciate its advantages aud limitations. For each of the years or the cities for which information is available for more than two groups of stores, we assign a certain rank to groups of stores set up on the basis of classification by size of establishment. The stores with current assets within certain class limits which have the highest ratio in a particular city or year as compared with stores belonging to other groups by size of establishment in the same city or year receive rank 1; the stores belonging to a different group by size, but of the same city or year, having a ratio next

to the highest, receive rank 2, and so forth. Since the number of groups of stores for which ratios happen to be available in a particular city or year is not the same for each city or year, these ranks can not be added and averaged without an adjustment which would make rank 3 for a city with ratios for only three groups of stores equivalent to rank 6 for a city with ratios for six groups of stores. This adjustment is made by dividing each rank by the number of groups for which ratios are available for the particular city or year. Thus the rank for the highest-ratio group in a city or year with a larger number of groups is made to signify more than the same rank in a city or year with a smaller number of groups, this difference in signification gradually diminishing as we go from the rank for the highest-ratio group to the rank for groups with a lower ratio, until it vanishes altogether for the rank of the group with the lowest ratio. After this adjustment, the ranks are averaged in order to eliminate the effect of the difference in the number of cities or years in which various groups of stores by size might be represented and hence ranked. The lower the average rank thus obtained, the higher the ratio of the group of stores so ranked as compared with the ratios of other groups of stores belonging to the same classification. This type of analysis gives us no inkling of the magnitude of the ratio; it tells us only which groups possess on the average higher ratios, and which lower. However, it enables us to eliminate the possible, and in our case very marked, influence of factors in which we are not interested at the moment and thus recommends itself to us as a valuable tool.

Net Effect of the Size-of-Establishment Factor. The results of treating the ratios by the method described for each of the cities separately are presented in Table LVI.

TABLE LVI

SIZE-GROUP RANKS: RANKING WITHIN EACH CITY

Groups of Stores by Size	Average Rank	Signification of the Rank
Assets under $10,000	.841	Lowest assets ratio
Assets $ 10,000 to $ 10,000	.840	Next to lowest
Assets 20,000 to 50,000	.68	———
Assets 50,000 to 100,000	.67	———
Assets 100,000 to 250,000	.685	———
Assets 250,000 to 500,000	.45	Highest assets ratio
Assets 500,000 and over	.49	Next to highest

When the same treatment is applied to ratios for each of the years separately, beginning with 1910 (this being the first year in which ratios are available for more than two groups of stores), the results appear as presented in Table LVII.

TABLE LVII

SIZE-GROUP RANKS: RANKING WITHIN EACH YEAR

Groups of Stores by Size	Average Rank	Signification of the Rank
Assets under $10,000	73	Lowest assets ratio
Assets $ 10,000 to $ 20,000	.71	Next to lowest
Assets 20,000 to 50,000	.52	———
Assets 50,000 to 100,000	.59	———
Assets 100,000 to 250,000	.54	———
Assets 250,000 to 500,000	.46	Highest assets ratio
Assets 500,000 and over	51	Next to highest

The distribution of the average ranks in both of the tables above corroborates the previous statement that the assets ratio tends to increase with the size of the store and that this tendency, while definitely present, does not strike the eye at the first glance.

Long-Time Trends of the Assets Ratios for Each Size-of-Establishment Group Separately. To conclude with the ratios by size-of-establishment groups, we must mention

the long-time trends in their movement. Up to a certain point, which is one of the years between 1912 and 1916, the ratios for all groups for which information is available for pre-war years (with current assets of under $250,000) decline; after this year, the ratios either oscillate about a horizontal level or rise more or less steeply. For groups of stores with assets of under $50,000, the period containing the rise in the ratio may be itself broken up into two parts; in the first of which the ratio rises, in some cases very considerably, and in the second of which the ratio slumps off almost as much as it had risen before, so that the net effect for the period as a whole is but a mild rise. The dividing point between these two parts is one of the years between 1917 and 1920. For groups of stores with assets of $50,000 and over, the rise in trend for the war and post-war years is a continuous one, so that the ratios for these larger stores rise much more than the ratios for the smaller stores. The fluctuations of the ratios for the larger stores are also less violent than those of the ratios for their diminutive competitors.

Factors Responsible for More Liberal Granting of Credit by Larger Stores. It is readily seen that the relation between size of establishment and magnitude of ratio established for instalment stores is, in general, the same as that for ordinary jewelry stores. In both cases, the ratios rise with an increase in the size of the store, and in time the ratios for the smaller stores either fail to increase at all or else they fail to increase as rapidly as the ratios for the larger stores. For instalment stores, this relation is not so marked and is burdened by more exceptions and deviations than for ordinary stores. This is, however, to be charged against the small number of stores utilized in the study, which makes the results more susceptible to accidental fluctuations. The realistic interpretation of this relation and of the forces

at work which produce it should be the same here as in the case of ordinary jewelry stores. The larger stores can, because of their sheer size and freer access to the capital market, extend a more than proportionately larger amount of credit to their patrons; they are also safer in doing so, because of the greater efficiency of their more rationally organized credit and collection departments and because, owing to their greater age, they have a considerable number of steady patrons who have dealt with them for a long time. Again, the greater increase in the ratio for the larger stores is to be explained in similar fashion; it is an indication of the greater vitality of the larger stores, of continuously increasing sales, most of which are made on credit, a result of experimenting with new credit arrangements and pioneering in new fields. Staying in the rut, conducting business in a routine, traditional way makes for a much more stable ratio for the smaller stores.

B. LOCATION

Introductory Remarks. To round out the study, we should investigate the relation between the size of the city in which a store is located and the magnitude of its ratio. This type of analysis would, however, be impracticable here, since with the exception of three towns all our information relates to cities with a population of 100,000 and over. The cities could not even be classified by regions, since for most of the regions we should have but two or three cities, a number not sufficient to neutralize the peculiarities of the individual cities and to bring forward the regional characteristics so far as they are reflected in the material. Thus to analyze our data for location is feasible only when we treat each city individually, without submerging it in artificial groupings.

Methods Followed in Obtaining Ratios Presented in Table LVIII. The representative assets ratios for the cities could be derived in a number of ways. We could obtain the arithmetic mean and the median of the series including the assets ratios of all the store years of a particular city. To mitigate the influence of the particular time distribution or size-of-establishment distribution of information for a particular city, we could, however, in obtaining the arithmetic mean, assign equal weights to each year or size-of-establishment group irrespective of the possible difference in the number of ratios that we have for each of the years or size-of-establishment groups. The equal weighting of years does not produce results significantly different from a simple arithmetic mean, since the number of years for each city is quite large and since for most of the years we have only one ratio at all events. Thus the weighted mean of the assets ratios will be obtained only for stores classified by size-of-establishment groups. For cities in which the store years are distributed into less than three such size-of-establishment classes, no weighted mean of this sort will be computed.

Assets Ratios by Cities. The representative assets ratios for cities, derived in the manner described, are presented in Table LVIII. The distribution of ratios illustrated by this table is rather interesting. If New York City be excepted, for reasons to be stated presently, the enumerated cities fall naturally into two groups: the smaller cities in agricultural states and the larger cities which serve as metropolises of areas far transcending state lines and harboring a large wage-earning population. The ratios for the first group of cities are considerably lower than those for the second—so much lower that they are not very different from the ratios found in the regular jewelry stores. The ostensible exception presented by the case of New York City is easily explained when we

TABLE LVIII

ASSETS RATIOS BY INDIVIDUAL CITIES

Cities	Number of Store Years	Simple Arith. Mean	Median*	Mean Weighted for Size-of-Establishment Classes
Louisville, Ky.	5	.22	—	—
Richmond, Va.	5	.24	—	.26
Norfolk, Va.	9	.31	—	—
Houston, Tex.	6	.32	—	—
New York City	32	.35	35	.45
Burlington, Iowa	5	.39	—	—
Kansas City, Mo.	19	.42	.45	.40
Cleveland, Ohio	16	.43	.45	.37
New Orleans, La.	26	.52	.46	.48
San Francisco, Cal.	19	.54	.57	.55
Boston, Mass.	10	.55	.57	.56

* No medians are given for cities for which the number of store years is less than 10.

state that for New York ten store years out of thirty-two relate to the year 1910 and previous, and that twenty-six store years out of thirty-two are of stores with assets of under $20,000. This inordinately heavy weighting of the earlier years and the smaller stores, not encountered in the case of any other city, explains, not only the low representative ratio, when as such is taken the simple arithmetic mean or the median, but also the increase in this ratio as soon as the weights are so distributed as to offset the prevalence of small stores.

Regional Differences for Instalment Stores. To discuss the smaller and less important differences found among the cities in this table would be useless: the data are too scanty and their representativeness too uncertain to make worthwhile the search for hidden uniformities. The main conclusion, however, stands out as eminently illustrated by the table and as perfectly in line with the

facts about the location and size of all the instalment stores drawn from the Reference Book and discussed above. It is obvious, now, not only that the number and size of instalment stores in agricultural states are small, but also that the amount of credit extended by them is not large. Moreover, it is curious that for the instalment stores in the Southern cities the ratio should be lower than elsewhere in the United States, while for the regular jewelry stores in the South the ratio is the highest in the country. Taken in connection with the actual magnitude of the ratio for both types of stores, this fact points to the conclusion that the so-called instalment stores in the South are scarcely different from the ordinary stores: both of them grant long-term credits, but neither of them gets paid in regular periodic instalments or advertises its credit accommodation in an energetic, "go-getting" manner in order to push its sales and to profit by a rapid turn-over. In the larger Northern cities, where the disbursement of income to the mass of the population is so regularly periodic as to make credit of the instalment type an invaluable convenience in the case of large purchases, there is an important and genuine difference between instalment and ordinary stores; there is room for both small and large instalment stores; there is the specialized appeal by instalment stores to a well-defined income group; there is the carrying by instalment stores of their customers for as long as ten or twelve months.

Isolated Effect of the Regional Factor. The reliability of the results discussed above will be strengthened, if by the method of average ranks we attempt to eliminate the influence of the time or the size-of-establishment factor and to show that their influence has not been sufficient to distort the effect of the location of the stores. In the computation, ranks have been obtained only in those cases in which there were more

than three cities represented in the year, or three or more cities in a size-of-establishment group. Again, no average rank has been obtained for a city unless it had three or more ranks to average. The average ranks thus deduced are given in Table LIX:

TABLE LIX

RANKS OF INDIVIDUAL CITIES

Individual Cities	Ranking Within Each Year	Ranking Within Each Size-of-Establishment Class
Louisville, Ky.	.86	—
Richmond, Va.	.84	.88
Norfolk, Va.	.756	—
Houston, Tex.	.76	—
New York City	.75	.38
Kansas City, Mo.	.59	.69
Cleveland, Ohio	.57	.78
New Orleans, La.	.36	44
San Francisco, Cal.	29	.26
Boston, Mass.	37	.31

In general, the average ranks on the year base resemble in their distribution the unweighted representative ratios, while the average ranks on the size-of-establishment base resemble the weighted representative ratios. In other words, the conclusions stated above have been confirmed by this analysis, which was designed to eliminate so far as possible the extraneous influences.

C. SUMMARY

This completes our study of the instalment jewelry stores. By way of summary, we shall characterize these stores on the basis of what we have learned from this study. Instalment jewelry stores are primarily small establishments located in the larger cities of regions

with highly-developed manufactures. They cater to the wage-earning and low-salaried population of the large cities, selling goods on nine-month terms, in some cases extended to a year. The larger stores among them have a more rapid turn-over, and sell a larger proportion of the goods on easier terms. For the last twenty-five years, the amount of credit granted by these stores has increased; yet the capital invested in them has increased still more, which is convincing testimony to the pecuniary attractiveness and growing respectability of the business done by these stores. The amount of credit granted by the larger stores has increased to a greater extent during this period than that granted by the small stores, a fact which is in agreement with what we have found for ordinary jewelry stores and in our other studies. The conclusion suggested is that the larger stores are better fitted to shoulder the burden of a continuously increasing amount of outstandings than are the smaller stores. The increased financing of the consumer by retail storekeepers may then be added to the long list of tendencies in retail trade which favor the larger store as against the smaller.

Part IV

CREDIT IN RETAIL HARDWARE STORES

Sources, Selection, and Quality of the Information. The data, an analysis of which is presented in this report, are certain parts of financial statements of hardware retail stores on file with the Massback Hardware Company (a wholesale hardware concern). The retail stores which it was deemed advisable to include in this study sell mainly kitchen hardware and house furnishings; some of them carry as supplementary lines automobile parts, electric supplies, and plumbers' and builders' supplies. It is clear that some of the latter articles are producers' goods; here, therefore, we shall not be able to assert, as we have done in the other studies, that we limit ourselves exclusively to sales and credit extensions to ultimate consumers. Were a separation of stores selling only to consumers possible, it would have been imperative; but with the lack of information as to the precise type of merchandise carried by the store and with the small number of store years available for analysis, such a segregation could not be

undertaken. This defect of the hardware material could not be remedied in the process of analysis, but it has to be borne in mind in the critical evaluation of the results.

TABLE LX

DISTRIBUTION OF HARDWARE STORE YEARS BY GEOGRAPHIC DIVISIONS

Areas	1925	1924	1923	1922	1921	1920	1919	Prior to 1919	Total
New York City	112	74	61	54	48	17	10	10	386
New York State.									
Metropolitan area	15	12	9	15	6	1	3	1	62
Other	2	5	5	4	2	—	—	1	19
New Jersey:									
Metropolitan area	48	43	30	26	29	25	13	4	218
Other	3	1	1	1	1	1	1	—	9
Connecticut·									
Metropolitan area	2	2	2	1	1	—	1	—	9
Other	5	6	3	6	9	1	5	2	37
Baltimore	2	10	9	1	—	1	2	—	25
Washington, D. C.	3	—	3	1	1	—	—	—	8
Massachusetts	5	3	4	1	2	—	—	—	15
Pennsylvania	4	2	1	2	1	1	—	1	12
Rhode Island	6	41	1	—	—	—	—	—	11
Total New York metropolitan area	177	131	102	96	84	43	27	15	675
Grand total	207	162	129	112	100	47	35	19	811

Geographic Distribution of the Data. The other distinctive characteristic of the hardware study is that it is based upon information relating to stores located for the most part in the New York metropolitan area. The data for the states of Connecticut, New Jersey, and New York were analyzed by location; only those of the stores were considered to belong to the metropolitan area which were located at a distance not greater than fifty miles from New York City—fifty miles being approximately the average maximum commuting distance. In

Table LX, in which the distribution of information by states, cities, and years is presented, we have incorporated the results of this analysis. From this table, then, we can learn how strongly the results of the survey are dominated by the situation in and around New York.

Limitations of Our Material and Changes in Procedure Made Necessary Thereby. The description of the amount and of the geographic concentration of the available material suggests that in methods and outline this study could not follow the stereotype of our other surveys. The data are too scanty to admit of any cross-classifications, so that the analysis of year-to-year changes must be confined to the entirety of the stores classified by years, rather than to separate groups of stores by size or location, as has been done elsewhere. The prevalence of New York area stores is another limitation; it makes the population-group classification unsatisfactory. A town with a certain population in close proximity to New York City is obviously altogether different from a place of the same size at a considerable distance from any large commercial center; the credit extensions by retail stores in these towns would scarcely be the resultant of similar factors; a group of stores, five-sixths of which are located in the neighborhood of New York and the rest in another region, would be entirely lacking in homogeneity, so far as the location factor is concerned. A separate analysis for location would appear to be necessary for the New York area stores.

Meaning of the Population Criterion and the Quest for Its Substitute. What should be the criterion of classification in this analysis? What objective characteristics, preferably quantitative, of suburban communities are comparable in meaning and in bearing on the credit-granting policies of retail stores to the population in

the study of ordinary cities? In the latter, population was used in an attempt to ascertain the type and the extent of the market that is likely to be served by a store; we have endeavored thus to separate stores catering to an agricultural population with wants and incomes differing considerably from those of a population served by stores in larger cities. It is primarily the character of the patronage of a store and the adaptation of the store thereto which we expect the size of the population center to reveal. How can this be learned about the towns in the New York area? How do they differ from each other in this respect? The last question is easily answered when such towns as Passaic and Montclair in New Jersey are contrasted. Both of them are in a sense extensions of New York City; one, however, houses the factories and factory labor, the other, the office workers and business men that would have been located, or would have resided, within the city boundaries were the area inclosed large enough to provide a comfortable amount of room on acceptable conditions. That is, the satellites of New York could be easily classified into residential towns or commuters' communities on the one hand, and industrial towns with the bulk of their population composed of employees of the factories in the towns, on the other hand.

Failure of the Percentage of Wage-Earners as a Type-of-Market Criterion. In searching for a quantitative criterion to use in this classification, the first one that readily comes to mind is the ratio of the number of wage-earners employed in the factories of a town to the total population of the town. This ratio could easily be obtained for all cities with a population of 10,000 or over by utilizing the information contained in Volumes I and IX of the Census Reports for 1920. However, when an experiment was made with the New Jersey towns in order to test the value of this criterion, the

results proved to be disappointing. Ratios of accounts outstanding to assets computed by the method of aggregates were obtained for three groups of New Jersey cities: those with a ratio of wage-earners to total population below .10, those with a ratio of from .10 to .199, and those with a ratio of .20 and over. The assets ratio for each of these classes was found to be .045; the distribution of assets ratios obtained by the same method for each town within these three large classes failed to exhibit a resemblance to any typical frequency curve. As to the reasons for this failure, we can only speculate. There is, first, the fact that the Census figures by cities show the number of wage-earners employed in the factories, but not necessarily residing in the same city; were the number of people living in one city and working in another city great, that would deprive our criterion of much of its significance and distort our classification. Nevertheless, we do not believe that, even in New Jersey, where in the metropolitan area cities and towns are within easy reach one of another, this out-residence assumes large proportions. Perhaps a second consideration is more likely to point to the true reason for the failure of the wage-earners' ratio as an index. The retail hardware stores also sell articles which are likely to be used in considerable quantities by factories; to such commercial purchasers, these stores sell on charge as a matter of routine, a fact which tends to swell the ratio of accounts to assets for stores in industrial towns as defined by the index.

The Home-Ownership Ratio. A more successful quantitative criterion is provided by the ratio of homes owned to total homes (Volume II of the Census Reports for 1920). The magnitude of this ratio characterizes the town as a residential or industrial center, although perhaps not quite so well as the index discussed above. Yet, on the other hand, the home-ownership ratio tells

us something about the stability of the population, that is, about the strength of the ties between the resident and the place of his residence. Every rational storekeeper in estimating the credit risk of a prospective sale on time attaches great weight to the fact that his customer owns the house in which he lives. This characteristic of the population is accordingly important for our purposes. Moreover, its significance is particularly great here, because we are dealing with hardware stores. Inasmuch as it will be readily admitted that a high ratio of home ownership is proof positive of a large proportion of small one- or two-family houses, and inasmuch as the prevalence of this type of building intensifies the demand for all sorts of hardware articles, and provides at the same time the possibility of making the payments for these purchases less burdensome to the consumers, the importance of this ratio can not be exaggerated.

Methods Followed in the Analysis by Home-Ownership Groups. Before presenting the results of this analysis, we shall mention a few technical details. Throughout this study we are dealing only with the assets ratio and the worth ratio. The number of store years showing sales is too small to be of any use in a statistical analysis; hence the sales ratio could not be computed. In the analysis by stability of population, the worth ratio is of no particular significance; it will be omitted here to make the table simpler. The table covers the material for all towns with a population of 10,000 or over with a number of exceptions. All the large cities, like New York, Baltimore, Boston, and Washington have been omitted, because the stability of their population is below the limits within which it can be significantly described by the home-ownership ratio. The material for the cities in the states of New Jersey and New York outside of the metropolitan area as well as for the cities

in the state of Connecticut within the metropolitan area has not been used, because it is too scanty to go into a group by itself and does not properly belong to any class in the table. The stores outside of the metropolitan area, the results for which have been presented in the table, have been analyzed for home ownership simply for comparative purposes; there is no intention to suggest that this type of analysis is necessarily useful for the rest of the country.

TABLE LXI

ASSETS RATIOS BY HOME-OWNERSHIP GROUPS

Percentage of Total Homes Owned	Total		N. Y. Metropolitan Area		Rest of the Country	
	Store Years	Ratio	New York State	New Jersey	Connecticut	Others
Under 20	98	03	—	03	—	—
20 to 30 . .	82	.10	.11	.06	.09	14
30 to 40 . . .	56	.13	10	08	.24	.13
40 and over	30	.14	—	07	—	—

Results of the Analysis by Home-Ownership Groups. The ratio increases with an increase in the proportion of homes owned. That is obvious if we look into the column headed "Total" (Table LXI), in which only the number of store years in each group is large enough to exclude the influence of accidental fluctuations and to bring out clearly the relationship sought. The ratios in columns for separate states exhibit the same relation between the stability of population and the amount of credit, although in a less clear-cut form. The number of store years, as already stated, is too small to warrant any cross-classifications; however, in this case we have deviated from the rule to make certain that, not only for the totality of the stores, but also for separate parts

of the "universe," the same relation can be found. In dealing with a new factor, it is reassuring to find that, so far as its influence is concerned, the classes into which the material is grouped are homogeneous and that the quantitative expression of this influence accordingly does not contain any elements of spuriousness.

Analysis by Population Groups. To complete the analysis, we shall also employ our ordinary population-group classification; it would strengthen the force of the results obtained above, if we found that the population analysis pointed to the existence of the same situation. The assets ratios for the various groups are:

Population under 2,500	.203
Population 2,500 to 10,000	.127
Population 10,000 to 25,000	.145
Population 25,000 to 100,000	.77
Population 100,000 to 500,000	.67

The ratio obviously decreases as we go from smaller to larger cities. This is in line with the home-ownership analysis; on the whole, the larger the city, the lower the ratio of home ownership, and the lower, according to the previous analysis, should be the assets ratio. This result, however, is in complete disagreement with what we ascertained in our other studies; in all of them, the ratio increased with the size of the city rather than the reverse. Whether this difference is due to the fact that we are dealing with a very small part of the United States or with a peculiar type of store, selling in part producers' goods, is not certain. This difference is not sufficient, however, to impair the validity of the generalization established on the basis of the other studies—the generalization that, as a rule, the assets ratio for retail stores increases with the size of the city.

Analysis by Geographic Divisions. To conclude with classification principles which might be subsumed under the general heading of location, let us take up at this

point the distribution of ratios by states and cities. In Table LXII, the ratios are given for all divisions in which the number of store years exceeds ten.

TABLE LXII

RATIOS BY GEOGRAPHIC DIVISIONS

Cities and States	Assets Ratio	Worth Ratio
New York City.......	.09	.11
Baltimore............	.09	.13
New Jersey...........	.08	.10
Connecticut	.13	.17
Massachusetts........	.13	.20
New York.	.15	.19
Rhode Island...... ..	22	37
Pennsylvania	.23	.33

From this table we learn that the assets ratios for the large individual cities are fairly low: we trust that the identity of the ratios for the two cities, although on the face of it a coincidence, points to a similarity of credit conditions. The assets ratios for the states of Rhode Island and Pennsylvania are far above the rest of the ratios; but we should not attach great importance to them, since they are based on a small number of cases. Among the other states, New Jersey stands out as the one with an assets ratio even lower than that found for New York City. This ratio measures the situation quite adequately; its implications are corroborated by the fact that in all of the classifications the ratios for the New Jersey store years appear decisively as the lowest, even as compared with the ratios for the same groups for the New York City and Baltimore material. We can only state this without seeing any satisfactory explanation for it. The worth ratios are distributed in a similar fashion. They add no new touch to the picture, except the implication involved in the fact that

throughout a higher assets ratio carries with it a more than proportionately higher worth ratio. This would suggest that the greater the proportion of outstandings, the larger is the part played by borrowing from the outside (as compared with the proprietor's own capital) in the financing of the enterprise.

Analysis by Size of Establishment. The same phenomenon is implicit in the relation of the worth ratio to the assets ratio for groups of store years classified by amount of current assets (size of establishment), as given in Table LXIII:

TABLE LXIII

RATIOS BY SIZE-OF-ESTABLISHMENT GROUPS

Stores	Assets Ratio	Worth Ratio
Current assets under $2,500	.04	.04
Current assets $ 2,500 to $ 5,000	05	.06
Current assets 5,000 to 10,000	05	06
Current assets 10,000 to 25,000	.08	.10
Current assets 25,000 to 50,000	16	.22
Current assets 50,000 to 100,000	.19	27

Perhaps a still more interesting aspect of this table is the tendency for the ratios to increase with the size of the store. In this respect, then, hardware stores located on the Atlantic seaboard are not different from the other types of retail stores studied elsewhere: for all of them, the ratio of outstandings to assets or to current net worth mounts with the size of the establishment.

Analysis by Years. The final point in this study is the movement of the assets ratio by years. Owing to the paucity of the material, it is impossible to follow this movement for each group of stores separately; we have to consider at once the whole material available for each of the years. If the time trends of the ratios of

various groups of stores are different in direction or in the amount of change per annum, a consideration of the trend for all of the groups taken together would give no inkling of that. Moreover, the net resultant of crisscross changes in the separate parts of the universe of stores might be the absence of any movement for the composite of these parts or a series of confused, irregular, inexplicable movements. In the case of hardware stores, we are fortunate in obtaining intelligible results even when dealing with the material in such a summary fashion. The assets ratios by years are:

1918	.13
1919	.25[1]
1920	.09
1921	.08
1922	.09
1923	.09
1924	.09
1925	.11

[1] For the year 1919, we have data for hardware stores published by the Bureau of Business Research of the Graduate School of Business Administration, Harvard University, in their *Serial Bulletin No. 21*. On page 15, we read that of 155 hardware stores for which reports were analyzed, 140 stores reported accounts and notes receivable. The relation of receivables to average monthly sales was as follows:

For 9 stores receivables were below .5 of sales.
For 26 stores receivables were .5 to 1.0 of sales.
For 36 stores receivables were 1.0 to 1.5 of sales.
For 30 stores receivables were 1.5 to 2.0 of sales.
For 39 stores receivables were 2.0 and over sales.

If the midpoint of the first class be taken at .25 and that of the last class at 2.25 (which is an underestimate), the arithmetic average of the ratio of receivables to annual sales for these 140 stores is .123. If we assume that the 15 stores which reported no receivables had no outstandings and that their sales per store were on the average the same as those of the 140 stores, the sales ratio for the 155 stores in 1919 is .111. In the same bulletin, the most common figure for turn-over is reported to be 2.1. Taking this into account and assuming that current assets include little more than receivables and merchandise on hand, we deduce the assets ratio comparable to a sales ratio of .111 to be approximately .18. Considering that we have consciously underestimated our sales ratio (both in the selection of a midpoint for the last class interval and in assuming that the stores not reporting receivables have none), and that our data are so limited geographically, the difference between our assets ratio of .25 for 1919 and the one deduced from the Harvard figures is surprisingly small. This comparison strengthens our confidence in the reliability of the material utilized.

The ratios do not exhibit any pronounced long-time trend; even were such a trend easily discernible, we should not have relied upon the scanty data and the superficial treatment to give us an indication of this trend. The year-to-year movement suggests that the ratio is higher in times of prosperity and lower in those of depression; the peaks of 1919 and 1925 and the trough of 1921 hint at this relation between the ratio and the phases of the business cycle. If this is so, hardware stores are similar to clothing and jewelry stores in the rather prompt co-ordination with the phases of the business cycle both of new credit extensions and of the total amount of outstandings. That this promptness is feasible is due, of course, to the fact that whatever credit is granted is for a short term.

Summary. Bringing this study to an end, we must emphasize first and foremost the inconclusiveness of its results, due mainly to the fact that our material consisted of the records of a comparatively small number of stores concentrated geographically in an area characterized by relatively uniform economic conditions. Of the retail hardware stores on the Atlantic seaboard (and only of these), we have learned that the amount of credit granted increases with the size of the stores and decreases with the size of the population center in which they are located. The latter is conditioned, apparently, by the greater fluidity of population as indicated by the home-ownership ratio; this instability of population is probably of importance greater than usual in this case, where we deal with portable articles of small value purchased by housewives at irregular and extended intervals. The trend of credit extension by hardware stores as a whole could not be ascertained; but the year-to-year movements of the ratios indicated that there tends to be a little more credit granted in times of prosperity and a little less in times of depression.

The ratio for 1925 is about 20 per cent higher than that for several preceding years. Whether this granting of more credit on easier terms, on some articles of hardware at least, is a reflection of the popularity of instalments in the "allied and associated" lines of business is an interesting question, which can be only suggested here.

CONCLUSIONS

1. Credit by Ordinary Specialty Stores

Introductory Note. In order to round out this survey of credit by retail lines, we propose now to restate the conclusions which may be expected to apply to retail credit in all branches of distributive business and to take account of the modifications which may be introduced by a continuing substitution of new types of retail institutions for the old-time specialty shop.

Grouping and Limitations of the Conclusions. Our results divide themselves roughly into two categories: first, those describing the differences between stores classified according to various principles, without reference to changes in time; and second, those describing the movement in time for different groups of stores, the change depicted either being of a secular character or consisting of annual fluctuations. The conclusions in the two categories are closely interconnected, as we have had occasion to notice time and again in concrete instances. The period covered is too short and the distribution of the material in time too uneven to expect independence. The same defects in our data destroy the definitiveness of the results of the second category, whether they be long-time trends or cyclical oscillations. All that we can say is that the ratios were what we

found them to be for the years and groups in question; whether they are manifestations of peculiarities inherent in stores of a particular type, or of long-run forces, or of cyclical factors, we can only surmise, without claiming to have established this firmly and indisputably.

Regional Differences. After sounding these warnings, we may turn to our task of summarization. We have found the relative amount of credit outstanding to be greatest in the South, and smallest in the Middle Atlantic region, the Western Grain section being in many cases no more credit-saturated than the East. This holds true both of states and of individual cities, although some of the latter exhibit the influence of factors peculiar to them as industrial centers. We are not in a position, and we do not feel called upon, to explain these differences between the sections of the country.[1] The striking features of the credit situation in the South—to take an extreme instance—have been a matter of common knowledge for years. Whether they are due to the prevalence of one-crop farming, to an insufficient development of banking facilities, to a greater depend-

[1] As a piece of supplementary information, if not as a partial explanation of the sectional differences, we quote here from the report of the Bureau of Business Research, Northwestern University, on *The Widening Retail Market and Consumers' Buying Habits* (A. B. Shaw Company, 1926). This report is based upon questionnaires circulated among students in a number of large American universities. The students were supposed to describe their own habits (while residing at home) and those of their fathers with regard to purchases of suits, overcoats, and furnishings. The percentage of returns for students and fathers together reporting purchases of suits and overcoats in the city of residence is, by districts, as follows:

District	I.	New England and Middle Atlantic	55%
	II.	East North Central division	68%
	III.	West North Central division	70%
	IV.	Three Southern divisions	80%
	V.	Mountain states, Washington and Oregon	75%
	VI.	California	60%

The investigators explain the condition in the South as contrasted with that in California or in the East by the fact that large cities are fewer in number and farther apart in the South than elsewhere. Patronizing the stores of one's home town creates a situation conducive to liberal credit extensions, if it is not a consequence of the desire on the part of patrons to avail themselves of this service.

ence of the urban population upon agriculture, to the aristocratic traditions of the upper classes, or to a number of other causes, we have no way of telling. For our purposes, it is sufficient to detect the influence of the regional factors and to ascertain their direction and force.

Retail Credit in Small Towns and Large Cities. The type of market served by a store varies not only with the region, but also with the size of the city in which the store is located. Stores in small towns at a distance from large population centers cater to the population both of the town and of the open country area within a certain radius of the town.[1] The retail stores in some-

[1] Provided that the town is an agricultural trading center, and not a residential suburb, a mining or lumbering town, a manufacturing town, or a railroad town. But according to H. P. Douglas (*The Little Town*, Macmillan, 1921), the author of this classification of small inhabited places, "the vast majority of the little towns still depend upon agriculture and the business growing directly from agriculture" (p. 41). Some of the rural sociologists have dealt extensively with the trade relations of town and open country, considering them as one of the mainstays of a "rurban" community. Thus C. T. Galpin writes, in *The Social Anatomy of an Agricultural Community* (Research Bulletin No. 34 of the Agricultural Experiment Station of Wisconsin), p. 6: "Surrounding each village or city center there is an area or zone of land including farm houses that trade regularly at the center. This zone is irregular in shape, due to such factors as irregular roads, lanes, marshes, and varying distances of the trade centers from one another. . . . Accessibility seems to be the largest factor in determining the regular trade center for any farm house. . . . A large and nearly complete trading center is likely to include almost all of the territory around an adjoining small or comparatively incomplete trading center." *See also* C. T. Galpin, *Rural Life* (Century Co., 1918), pp. 72–75. Still more interesting are the generalizations about types of trading centers, their location with regard to each other, and the overlapping of trade areas made by J. H. Colb in his description of *Service Relations of Town and Country* (Research Bulletin No. 58 of the Agricultural Experiment Station of Wisconsin). The author of this suggestive work furnishes data (p. 19) based upon the survey of Dane County, Wisconsin, which have enabled us to establish the following relations between the population of the trade area and that of the trading center serving it:

Population of Trade Center	Population of Trade Area
100 to 300	2.9 times as large
301 to 500	2.4 times as large
501 to 1,000	1.9 times as large
1,001 to 2,000	1.4 times as large

what larger cities depend more strongly upon the patronage of the residents; as we go to still larger cities, we find that for many stores the sales sphere does not extend beyond the confines of a restricted neighborhood.[1] In other words, the size of the city as measured by its population is no indication of the magnitude of the market. It provides, however, a clue to the other characteristics of the market; and, among them, a clue to the needs of the people constituting it. The small-town store must adapt itself to the demands of the farming population and of the small-town residents closely dependent upon farming for a living: it must extend long-term credit, if it is to do business at all.[2]

[1] As an illustration of this tendency with regard to clothing, we quote again from the report of the Bureau of Business Research, Northwestern University, *op. cit.*, p. 56. The percentage of returns for students and fathers together reporting purchases of suits and overcoats in the city of residence is as follows:

Cities with population under 500	5%
Cities with population of 500 to 1,000	15%
Cities with population of 1,000 to 3,000	48%
Cities with population of 3,000 to 5,000	55%
Cities with population of 5,000 to 10,000	57%
Cities with population of 10,000 to 15,000	65%
Cities with population of 15,000 to 20,000	60%
Cities with population of 20,000 and over	84%

Were the last group subdivided further and the inquiry made for the large cities as to intraborough and interborough buying, we are confident that the hypothesis presented in the text would have been substantiated to the fullest extent in this particular instance. By way of further indirect evidence on the same point, we may present a table adapted from the Trade Information Bulletin No. 394 of the Domestic Commerce Division, U. S. Department of Commerce on *Vehicular Traffic Congestion and Retail Business*, p. 2 (quoted *op. cit.*, p. 29, footnote 2). The percentage of stores in an unselected group reporting more than 50 per cent of total store patronage as coming in automobiles was as follows:

In cities with a population of 2,500– 10,000	49% of total in group
In cities with a population of 10,000– 50,000	30% of total in group
In cities with a population of 50,000–200,000	16% of total in group
In cities with a population of 200,000 and over	13% of total in group

[2] From Bulletin No. 247 of the Agricultural Experiment Station of Wisconsin, on *Farm Credit in Wisconsin*, we learn that in Dane County (apparently for the years 1913–1914) "the total number of accounts reported" by 110 business institutions "indicates by the mere fact of its size that the farmer, in many cases, has accounts on the books of several merchants at the same time. It was also shown that approximately 60 per cent

The stores in the larger cities have to meet the demands of the wage-earning and low-salaried groups of population by waiting for payments until the beginning of the nearest income-disbursement period in the case of small and regular purchases, and by extending credit over a number of such periods when the purchase involves a relatively large amount and is made at infrequent intervals. We observe, therefore, that the amount of credit outstanding is relatively high in small towns, is somewhat less in larger places not in so immediate a contact with the farming vicinity, and rises again as we pass to the larger cities in which the needs of the manufacturing population are more clearly defined and exert a greater pressure.

With regard to consumers' goods for which the element of æsthetic appeal is prominent, and which represent considerable investments for their purchasers (so-called "shopping lines"), the situation is somewhat complicated by the fact that the farmer and the small-town dweller are likely to travel long distances to cities where they will be sure to find a large selection and

of the farmer customers receive credit" (p. 45). In the same bulletin, we find the following estimates made by the merchants regarding the length of time for which open accounts run. For general stores, department stores, and groceries, in which credit maturities are as a rule shorter than for dealers in machinery, hardware, implements, building material, etc., the percentage of amount outstanding by lengths of time is as follows (p. 47):

Running less than	3 months	42.5% of total
Running 3 to	6 months	30.3% of total
Running 6 to	12 months	18.7% of total
Running over	12 months	8.5% of total

According to these figures, the average length of time an account remains outstanding is, even for these short-term transactions, about 5 months. The situation for New York rural general stores is described by Leland Spencer in *An Economic Study of Rural Store Credit in New York*, Bulletin No. 430 of the Agricultural Experiment Station of Cornell University. On pp. 14, 15, and 17, he furnishes figures from which it appears that 55 per cent of the customers of these stores receive credit. The average term of a book account is 2.6 months (or 4.6 months, if in arriving at the average we do not weight the accounts according to their amount), and of a customer's note, 13.5 months.

moderate prices.[1] The country-town store is forced, then, to specialize more in the subordinate branches of the business, such as that of repairing, renovating, and manufacturing small articles to order, or that of selling lower grades of merchandise. The motives for large and long credit extensions for such stores are not so strong as for stores carrying a full line of goods (some high-priced articles among them) and in a better financial position (this being implied in the fact that they do less manufacturing and repairing). On the other hand, the large-city stores dealing in the same goods find themselves in a position in which they are pressed to accede to the demand for credit accommodation from both the shopping farmer and the city resident. These are the circumstances which result, for the "shopping trade," in a relative amount of credit outstanding which continuously increases with the increase in the size of the city in which the store is located.

Credit by Small and Large Stores. The relative amount

[1] On this point again we have partial evidence from the report of the Northwestern Bureau of Business Research. Whereas on the average only 66 per cent of the students and fathers buy suits and overcoats in their home towns, fully 79 per cent patronize local stores in buying men's furnishings. (*The Widening Retail Market*, tables 13 and 14, pp. 76 and 83). Perhaps still more interesting in this connection are the figures for the reasons that guide farmers in choosing trading centers in which to purchase various goods (J. H. Colb, *op. cit.*, pp. 45, 48, and 50). The percentage of farmers specifying the enumerated reasons is as follows:

Reasons Given	Groceries	Furniture and House Furnishings	Clothing
Nearest trade center	39	23	15
Most convenient	18	10	10
Better goods	14	24	34
Variety and selection	—	—	19
Better price	11	22	19
Other	18	21	13

of credit outstanding varies also in accordance with the size of the retail establishment. In drawing conclusions on this point, we have been handicapped by the fact that, whereas the most accurate measure—the sales ratio—has not been available in some cases and has in others been based on too small a number of records to make it entirely trustworthy, the substitute measure to which resort has been taken, viz., the assets ratio, is peculiarly liable to the effect of changes in turn-over in proportion as the size of the stores under consideration varies. Nevertheless, it has been possible to establish with some degree of assurance the conclusion that the relative amount of credit outstanding increases as a rule with the dimensions of the store that grants the credit. This result has been reached by classifying establishments according to size and has been verified by a more elaborate analysis in which the population factor has been held constant.[1] We have dwelt on the conditions responsible for this tendency in attempting to explain each of the concrete findings of this nature. These conditions are mainly: first, the advantageous position of large stores, owing to the fact that they receive better terms and longer credit accommodations in purchasing their merchandise, and have in addition freer access to the loan funds of banks; second, the greater efficiency of the larger retailers in choosing safe credit risks, owing to the organization of rationally conducted credit departments and to their longer experience in business. However, we must notice that among larger stores there is more specialization with regard to either cash or credit sales. Since no attention has been

[1] Other investigators have arrived independently at the same conclusions on this point. See, for instance, the Bulletins of the Harvard Bureau of Business Research Nos. 13, p. 24; 18, p. 12; 35, p. 65; and 52, p. 66, for observations regarding grocery stores; and Bulletin No. 23, p. 25, on jewelry stores.

paid to this circumstance in selecting the sample, we find that the regular rise of the ratio with the increase in the size of the store has been in some cases disturbed by untoward deviations. As another modifying condition, we must mention the fact that the smaller establishments apparently extend more credit when located in smaller towns and that the large stores are better equipped to render this service in the larger population centers. Thus the differences as to credit between stores of various sizes increase with the population of the city in which the stores are located.

Financing of the Retail Dealer Extending Much Credit. The nature of the arrangements entered into by retail dealers in order to facilitate for themselves the carrying of their customers is revealed in some cases when a comparison is made between the worth ratio and the other ratios. When receivables constitute a prominent part of total current assets, a part of the burden of financing the consumer is shifted by the retail establishment to outsiders, whose identity we can only surmise. Therefore, in the furniture trade, for instance, the simultaneous variations of the quotients of the worth ratio by the assets ratio (that is, of the current-assets-to-net-worth ratio) and of the ratios of receivables to current assets are usually in the same direction. For other retail lines, in which the sale on credit is not so frequent and the credit is extended for shorter terms, we need a more sensitive measure of internal adjustments to time sales than is provided by the worth ratio: the quotient of the worth ratio by the assets ratio in these lines is affected more strongly by other factors than by fluctuations in the amount of receivables.

Cyclical Fluctuations in Outstanding Credit. We shall keep to this dichotomous grouping of the branches of retail trade also in describing the cyclical oscillations

of credit. In lines for which the relative amount of credit outstanding is large, the granting of credit has come to be one of the accepted methods of maintaining and stimulating sales, so that the credit granted in times of depression is not likely to be much less in volume than that granted in times of prosperity. Moreover, as a result of long terms, there is a still greater probability that the receivables are nearly the same in amount in times of depression as they are in times of prosperity. This is precisely the situation which we have found to exist in furniture stores. On the other hand, in those retail lines in which credit sales do not appear so important and are not so widely practised and in which terms are shorter, the expansion and contraction of receivables in accordance with general business conditions are more rapid and noticeable. We may add, however, that for all branches the credit policy of large stores seems to differ from that of small stores in the point of a more timely adjustment to the changing conjunctures of the market. There is no doubt that the greater efficiency of the collection departments of the large establishments, their more rational accounting, making for a speedy writing-off of bad debts, and their ability to increase sales by lowering prices rather than by allowing easy terms of payment, influence the amount of receivables on their annual balance sheets.

Secular Tendencies in Retail Credit by Regions. Our conclusions regarding long-time tendencies are based primarily on the results of the jewelry study and are in a less important manner supported by comparisons with Secrist's results in the clothing study. We thus do not take account of the branches of retail trade in which instalment sales loom large and are likely to increase as time goes on. With these qualifications superimposed, we may state that the increase in the relative amount of

credit outstanding seems to be positively correlated with the rapidity of the economic development of the region. This conclusion is drawn from several separate analyses: the changes in the ratios both by states and by individual cities; the movements of the ratios for population groups, especially for that including stores in swiftly growing cities—all these suggest the tendency described. The explanation of this interdependence can be only tentatively sketched: it is somewhat analogous to the reasons generally advanced for the "easy-money" clamor of the Western farmers after the Civil War and for the continuous intensive demand for credit on the part of every pioneer community. In rapidly developing territories, the great mass of the population constantly feels an insatiable need for ready money to invest in all sorts of business openings which promise amazing returns; on the other hand, the rising standard of living necessitates a steady increase in expenditures. At the same time, the retail dealer is not loath to grant credit, inasmuch as prosperity reigns supreme, so that the risks involved are small, and inasmuch as he is well compensated for waiting by unusually high "mark-ups." He does not even tie up his capital in receivables, since he himself borrows a great deal more from outside sources than is necessary to carry his customers.

Trends in Retail Credit for Small Towns and Large Cities. Another secular tendency established in this study is that the amount of credit outstanding increases in time more rapidly in the larger cities, and expands rather slowly in the smaller cities, even declining for some of the smallest inhabited places. The processes of which this is one aspect seem obvious enough. A majority of the small towns are service stations for the population of the adjoining agricultural areas, while the larger cities thrive upon manufacturing and com-

merce, which cater to the national or the world market. The decline or slow growth of credit in the smaller places is therefore connected with the changes taking place in American agriculture: the diversification of crops, the spread of dairy farming, and other forms of intensification through which agriculture becomes increasingly adapted to, and dependent upon, the needs of a country undergoing thorough industrialization. The farmer who is not in a position to adjust himself to these changes is a failure and can not buy much in the village. The farmer who prospers does not now stand in need of credit so much as he did a generation ago, since his income is becoming regularized and is spread more evenly over the year. He drives his automobile to a larger city in order to benefit by the greater selection and more efficient service offered to him by the specialty shops, or he purchases from a mail-order house in order to take advantage of the lower prices, inasmuch as the necessity of paying cash on delivery forms no important obstacle. In the larger cities, on the other hand, an increasing resort to credit is found mainly for two reasons. First, the use of banking facilities by the consumer who budgets his expenditures, and payments by check, even in retail transactions, become more common. This naturally leads to the charging-up of purchases and to the clearing of accumulated obligations at the end of the week or the month. In the second place, the rise in the standard of living of the wage-earning and low-salaried groups with the consequent increase in the consumption of articles of large value renders it necessary for the retail dealer to assume at least in part the financing of such purchases by letting some of his charge accounts run longer than the customary thirty days or by selling frankly on instalment.

Trends in Credit for Stores of Various Sizes. Finally, we

have observed that the amount of credit outstanding increases in time more rapidly for large stores than it does for smaller establishments in the same trade. That such a tendency must obtain could have been readily deduced if the processes described above were followed through to their logical conclusions and if the facts of the continuous urbanization of the country and of the greater frequency of large stores in the large cities were borne duly in mind. If the need for credit on the part of the rural population declines and that of city folks increases, and if larger establishments are in a better position to meet these demands, is it not inevitable that the credit outstanding for larger stores, tending as they do to be located in the bigger population centers, should increase more than that for their smaller brethren in the same line of business?

Need of Attending to Retail Institutions Other Than the Ordinary Specialty Store. If the long-time tendencies described above are projected into the immediate future and the trend toward further centralization in the distributive field and toward urbanization for the country as a whole is considered, it seems that we may safely predict an increase in the total volume of credit outstanding in retail trade, even if we disregard the recent developments in those lines that are making tremendous headway because of the instalment "seven-league boots." On second thought, however, it appears that in so prognosticating we have committed the sin of oversimplification. Our inquiry has been limited to merely one type of retail institution, the ordinary specialty store, which, according to the only authoritative estimate,[1] transacted in 1923 less than 68 per cent of the total volume of retail trade. The rest of the

[1] Paul H. Nystrom in the *Harvard Business Review*, Vol. 3, p. 158.

retail sales are handled by a number of relatively new distributive agencies, showing all the signs of vigorous growth and displacing gradually the old-fashioned storekeeper in town and country. If our conclusions are to have general validity, we must pay heed to these processes of substitution and modify our descriptions of the present and, still more, our anticipations of the future.

2. Credit by Retail Institutions Other Than the Ordinary Specialty Store

Changes in Organization of Retail Trade and Their Bearing on Our Problem
The Rural General Store
The Mail-Order House
The Department Store
The Chain Store

Changes in Organization of Retail Trade and Their Bearing on Our Problem. How shall we describe these processes of development and transformation and their bearing upon the volume of outstanding credit? As a first step, we may classify these processes according as they affect conditions in small towns or in large cities. To the first group belong such generally recognized phenomena as the recession in the number of general stores and in the volume of business done by them, as well as the development of the activity of mail-order houses competing both with the general stores and perhaps still more largely with the country-town specialty shops. In the second group, we should place the increase in the share of the total amount of retail business handled by department stores and chain stores, at which the regular retail dealers have taken considerable alarm. It is claimed that all these newcomers in the retail field are rather chary in extending credit and very

stringent in collecting amounts due, so that the net effect is a diminution in the outstanding volume which partly offsets, and in the future may entirely neutralize, the increase in credit for ordinary specialty stores treated in this study. Let us attempt now to estimate the magnitude of these counteracting influences.

The Rural General Store. Our information regarding general stores is rather limited. They seem to be purely rural institutions[1] and judging by the Census statistics of the number of their proprietors, their number declines just about as rapidly as the percentage of population in rural territory.[2] It is also known that they extend considerable amounts of credit,[3] and that the uniform-

[1] Compare, for instance, the number of general stores and of manufacturing establishments per town in Dane County, Wisconsin, as given by J. H. Colb, *op. cit.*, p. 16.

Towns with Population	General Stores	Manufacturing Establishments
100 to 300... .	2 1	1
301 to 500.....	2 8	1 6
501 to 1,000....	3 6	1.0
1,001 to 2,000.....	3 3	3.0
2,001 to 6,000. ..	1.5	7 5

[2] The number of retail dealers in the class of "general stores" has fallen, from 1910 to 1920, according to *Reports on Occupations*, Vol. IV, of the Census Bureau from 88,059 to 80, 026; while the total number of retail dealers increased from 1,195,029 to 1,328,-275. At the same time, the percentage of the population living outside of incorporated places and in incorporated places with a population of under 2,500 dropped from 54.2 to 48.6 (Vol.II).

[3] Thus in the report of the Committee on Business Research of the University of Nebraska entitled *Analysis of Financial Statements of Nebraska General Stores* (Bulletin No. 3, Nebraska Studies in Business), figures are given for 158 general stores for the second quarter of 1922 (p. 12), from which it appears that even in this year of depression the ratio of receivables to current assets was .103. From the data furnished by Leland Spencer, *op. cit.*, pp. 10 and 13, we estimate that the ratio of receivables to sales for general stores in the three surveyed counties of New York was .124, which is fairly high, considering that this was a year of depression and that farming in this state is diversified to an extent far greater than that which is representative for the country.

ities which may be observed in this phase of their activity seem to be quite different from those established by us for specialty stores.[1] Whether the relative volume of their outstandings is greater than that of their local competitors, it is impossible to ascertain, because they sell a great variety of goods in proportions differing from one store to another. Perhaps the easiest way of appraising the effects of this passing-away of one of the venerable American institutions is to point out that account has been taken of them in our conclusions. The transformations in agriculture and the spread of the Ford habit have minimized the importance of the country-town as a trading center for the farming community; this has degraded the town's shops and has precipitated the disappearance of general stores. So far as the diminution in the volume of credit outstanding is concerned, the effect of the decay of the general

[1] The relative amount of credit outstanding for general stores seems to decline when the store is shifted from a smaller into a larger town. Thus, for a sample of 18 stores located mainly in Texas with assets of from $20,000 to $50,000, we find that the assets ratio declines from .159 to .144 as we pass from towns with a population of under 2,500 to those with a population of from 2,500 to 10,000. Moreover, the smaller among the general stores have more credit outstanding than the larger. According to Leland Spencer, *op. cit.*, p. 10, the amount of total sales per general store classified according to percentage of credit sales was as follows:

Percentage of Credit Sales	Number of Stores	Sales per Store
33% or less....	25	$25,857
34% to 50%....	36	24,431
50% and over...	22	23,478

We find also that the cost of credit to a larger general store is greater than to a smaller. Leland Spencer, *op. cit.*, p. 25, finds that the annual rate of credit cost to a general store with sales of over $30,000 is 21 per cent, while to somewhat smaller stores it is as low as 16.2 per cent. This may suggest that the efficiency of a general store increases with its size only until a certain point is reached; this size of maximum efficiency is relatively small.

stores is part and parcel of the tendency described above as the decline in the ratios for the small-town specialty shops. The general-store problem is not, therefore, anything new that has been overlooked in the preceding discussion: unwittingly, we have dealt above with a tendency the sphere of manifestation of which is wider than the one to which our material was limited.

The Mail-Order House. The other competitor of the specialty store in the small towns is the mail-order house. Much has been written about its remarkable success, with praise and condemnation aplenty. This phenomenon has attracted so much attention merely because of its novelty: its dimensions are not at all so strikingly large. According to Nystrom's estimate quoted above,[1] mail-order houses transacted in 1923 only about 4 per cent of the total volume of retail business.[2] Since then, if the index numbers of the Federal Reserve Board for the four largest houses be taken as representative, the mail-order sales have increased by 25 per cent,[3] while the total volume of retail trade increased, according to Nystrom,[4] from thirty-five

[1] See p. 29; the estimate is given in the *Harvard Business Review*, Vol. 3, p. 158.

[2] While Mr. Nystrom himself deprecates the use of this figure as a measure of the importance of mail-order houses and quotes, apparently with some misgivings as to its accuracy, a figure of 20 per cent for the share of rural trade done by mail (*Economics of Retailing*, Ronald Press, 3rd printing, 1922, p. 291), we still feel justified in utilizing the estimate of 4 per cent, because we are concerned with the influence exerted by mail-order selling upon the total volume of outstandings for the retailers of the entire country.

[3] The index of average monthly sales for the four mail-order houses, with the average for 1919 taken as 100, was as follows:

1923	99
1924	105
1925	118
1926	124

The figure for 1926 was estimated on the basis of the showing made by these concerns for eleven months of the preceding year, as reported in the January, 1927, issue of the *Survey of Current Business*.

[4] The estimate for 1923 was published in the *Harvard Business Review*, Vol. 3. The

to thirty-eight billions of dollars; thus the slice of the pie obtained by the mail-order houses since 1923 has not become much larger. Furthermore, it is fairly obvious that these concerns succeed most when the prices of the goods which they sell are rising. As a result of purchasing large stocks in advance and of being able to offer them at lower prices than the local storekeeper, they gain the farmer's trade.[1] When prices are stable or declining, the appeal made by the mail-order catalogue is not so strong. The growth of their business in the future is, therefore, not likely to be so vigorous as it has been in the past. To qualify still further the effect of selling by mail on the credit situation, we may add that "shopping lines" are not likely to be sold in this fashion; whereas it is mainly the purchases of these goods that are financed in both town and country by enterprising retail dealers for relatively long terms. Moreover, when mail-order houses do sell such goods, or any durable goods of high value, they extend quite considerable amounts of credit.[2] The relative volume of outstandings for these concerns is not so small as one might suppose. It has a tendency to increase, at least for some of these firms, if representativeness be granted to the inferences from the data

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estimate for 1926 was kindly furnished by Mr. Nystrom in reply to a request from Professor Seligman.

[1] According to J. H. Colb, *op. cit.*, p. 74, nearly 70 per cent of the Wisconsin farmers who assigned any definite reason for buying from mail-order houses specified "better price" as their motive for doing so. Only 17 per cent of the farmers thought of "good quality" when ordering by mail.

[2] *See* Paul H. Nystrom, *op. cit.*, p. 298. *Also* V. E. Pratt, *Selling by Mail*, McGraw Hill, 1924, pp. 296 and 372. Paul D. Converse, *Marketing Methods and Policies*, 2nd ed., Prentice Hall, 1924, p. 283, says: "Many mail-order houses give little or no credit to buyers . . . . many of the specialty mail-order houses, however, have liberal credit policies. 'No cash with orders,' '30 days' free trial,' are familiar advertising slogans. Some of the larger houses have introduced a limited credit policy, and will now sell certain articles on the instalment plan. . . . Such articles are generally items of relatively large value, such as farm implements and house furnishings. Credit sales are sometimes used to stimulate business in dull seasons."

available for the two largest houses.[1] Again, analyzing the material for the last five years for fifty-five of the smaller houses, we have found that the sales ratio increases with the amount of current assets.[2] It is thus possible to assert that the credit tendencies for mail-

[1] The ratios of receivables to net sales based on figures taken from the annual balance sheets of the two largest mail-order houses are as follows:

Year	Sears, Roebuck & Co.	Montgomery Ward & Co.
1909	.012	—
1910	011	—
1911	.013	—
1912	020	—
1913	025	.063
1914	.034	040
1915	033	.040
1916	.053	.032
1917	.060	044
1918	060	057
1919	084	.046
1920	.204	081
1921	.255	.068
1922	180	042
1923	.125	037
1924	100	.033
1925	081	033

The receivables of these concerns include other items besides amounts due from customers; unfortunately, these items could not be segregated. However, these extraneous items amounted to less than 10 per cent of the total receivables in the first years of the past decade, and the tendency has been for them to decline in relative importance. The ratios are given here from the first year for which it has been possible to compute them.

[2] The ratios of receivables to sales for the smaller mail-order houses are as follows:

Concerns with current assets under $ 20,000 have a ratio of 036
Concerns with current assets of from $ 20,000 to $ 50,000 have a ratio of .094
Concerns with current assets of from $ 50,000 to $ 100,000 have a ratio of 137
Concerns with current assets of from $100,000 to $1,000,000 have a ratio of .132

The ratio for the highest assets group is somewhat unreliable, since it is based on five returns only. The material for the smaller houses was obtained from the same credit-rating organizations which furnished us with all our data on specialty stores; it is to be presumed, therefore, that it consists of financial statements for specialty mail-order houses.

order houses are fairly similar to those established by us for the specialty stores. Whatever the immediate effects of the increase in the share of business done by mail may be—and we have endeavored to show that they are not so striking—the increase in the size of mail-order houses and the passage of time will speedily restore the diminished amount of outstanding credit to its former level.

The Department Store. Passing to a discussion of the situation in the larger cities, we have to take account, first, of the increasing popularity of department stores. It is alleged that, while handling a constantly growing share of the retail business, they grant relatively less credit than the specialty stores which they supplant. We have to establish, then, the importance of department stores in the retail field and the points of difference between their credit policy and that of their competitors.

According to Nystrom's estimate quoted above, department-store sales amounted in 1923 to about 16 per cent of the total volume of retail trade. Since then, to judge by the Federal Reserve Board index based on sales for larger stores,[1] the share of the business transacted by department stores has diminished rather than increased. The figure of 16 per cent is not, therefore, for the present, and will not be for the proximate future, an underestimate. Compared with the volume of sales of the regular retailers, the magnitude of this percentage indicates the narrow range of any influence which department-store activity may exert on the total amount of outstandings.

To limit still further the extent of this influence, let

[1] The average monthly sales for 359 department stores reporting to the Federal Reserve Board were 124 in 1923 and 131 in 1925, when the average for 1919 is taken as 100. The total volume of retail sales increased from 35 billions in 1923 to 38 billions in 1926, according to Nystrom; with the increase for the last three years assumed to have been spread evenly over these years, it would appear that the increase in the index has been slightly less than that in the estimated figure for the total volume of retail business.

us ascertain what are the differences between departmentized and ordinary stores with regard to credit granting. It is generally thought that the former extend relatively less credit than the latter, this opinion being founded mainly upon two considerations. First, it is believed that department stores are more prone than others to appeal through low prices and frequent special sales, which make it unnecessary and cumbersome to offer credit accommodation. In the second place, it is declared that credit extension is a more hazardous operation for department stores, because they are usually large institutions, the patronage of which is not limited to the residents of the city district or borough where they are situated. It seems to us that neither of these considerations is sufficient to establish the conclusion that department stores are in an inferior position in the granting of credit. The arguments imply a comparison between large departmentized and small ordinary stores. Were we to compare stores with approximately equal volumes of sales, we should find that among large ordinary stores as great a percentage are appealing to their clientele through the price tag and the special-sale advertisement as among department stores. The large ordinary stores are also rarely limited in sales to a particular section of the city. With regard to the last point, we may add that, since department stores have learned to counteract the difficulty involved in drawing their customers from a wide area by organizing an efficient delivery service, there is no good *a priori* ground why they can not have minimized the credit risk represented by a "foreign" patron by the establishment of credit-investigating and collection departments. Moreover, it appears that acquiring and holding a customer by opening a charge account for him is of greater value to a department store than to its rivals similarly situated, because in the latter the customer shops at infrequent

intervals and spends in many cases but small sums, whereas in the former the customer, who avails himself of the opportunities offered by each of the departments, may be seen at the counter practically every week. Finally, we may observe that, as a matter of fact, when a department store markets goods which are sold in specialty stores on liberal credit terms, it inevitably meets the competition by providing a similar credit accommodation.

Turning now to the statistical information on credit extensions by department stores we find: first, that it is limited; and second, that we can scarcely compare the percentages and ratios for department stores with those for specialty stores, since the variety of the goods sold in the former is great and the proportions in which the different goods sell are not constant. Thus we find, in the Bulletins of the Harvard Bureau of Business Research (Nos. 53 and 57), that department stores with annual net sales of under $1,000,000 charged 37 per cent of their sales in 1924, and sold on time 34 per cent of their goods in 1925; while for the larger department stores these percentages are 48 per cent and 51 per cent respectively. At the same time, it appears that the average age of an account for the larger department stores in 1924 was 75 days; in 1925 it was probably greater, since a part of the time sales in this year was reported to be made on instalment. These figures taken by themselves denote the existence of quite a respectable volume of credit outstanding. When we turn, however, to the data given in the same bulletins for stores specializing in the sale of wearing apparel, we find that the percentages of charge sales are 60 per cent in 1924 and 58 per cent in 1925. These figures are scarcely comparable with those given above, because department stores sell a great many articles like toilet preparations, notions, etc., on which specialty shops extend wellnigh no

credit at all. What the percentages for the former would have been, had they been based on the volume of the sales of those articles only which are customarily marketed on time, no one can tell.

The difficulty of drawing statistically substantiated conclusions bearing on our problem will be mitigated, if we investigate the quantitative information for department stores with the purpose of ascertaining how credit outstanding varies in time, by population groups, and for establishments of different sizes. Endeavoring to accomplish this, we have analyzed a number of financial statements and balance sheets for department stores.[1] While resort was had to assets ratios and while the number of statements was dangerously small, so that the information was altogether unreliable and could lead to no conclusive results, it appeared nevertheless that the tendencies suggested by the analysis were similar to those found in our main study to obtain for specialty stores. It was found, for instance, that the mean of the assets ratios for 56 stores, which were operating before 1919, is .149; while that for 37 stores, in 1919 and since, is .187; this leads us to believe that an increase in outstandings for department stores has taken place during the post-war period. It appeared also that the means of assets ratios for department stores located in population centers of varying size are:[2]

[1] This material was obtained in part from the credit-rating organizations which supplied us with data for all our studies. To this, we have added a number of balance sheets for the larger concerns culled from Poor's *Manual of Industrial Securities*.

[2] The means of the assets ratios for department stores classified according to the population principle in the period prior to 1919, and in the period including 1919 and subsequent years are:

	Before 1919	1919 to 1925
Population 2,500 to 25,000....	.128	.160
Population 25,000 to 100,000....	.114	.201
Population 100,000 to 500,000....	.181	.256

Population	2,500 to 25,000	.142
Population	25,000 to 100,000	.149
Population	100,000 to 500,000	.204

If we assume that the figure for the lowest population group is unduly high, because of the unavoidable admixture of general merchandise stores improperly calling themselves department stores, the figures above would intimate that the relative amount of credit outstanding increases as we pass from small towns to large cities. Finally, we have found the means of the assets ratios for stores grouped according to size to distribute themselves in the following manner:[1]

Stores with

current assets of from	$ 50,000 to $ 100,000	.098
current assets of from	100,000 to 250,000	.150
current assets of from	250,000 to 1,000,000	.171
current assets of from	1,000,000 to 5,000,000	.252
current assets of	5,000,000 and over	.260

Although these ratios may be misleading, because of the possible differences in turn-over between larger and smaller stores, we still believe that they reflect a tendency on the part of the larger stores to have relatively more credit outstanding than the smaller stores.

We may repeat then that the variation of credit by groups of department stores and in time appears to be

In addition to strengthening the conclusions drawn from the population analysis, this distribution of ratios corroborates also our inference regarding the increase in the volume of credit outstanding during the post-war period.

[1] The means of the assets ratios for the time prior to and since 1919 for some of the size groups for which sufficient information is available are given below:

	Before 1919	1919 to 1925
Stores with current assets of $100,000 to $ 250,000	.132	.186
Stores with current assets of 250,000 to 1,000,000	.162	.179

We observe again an increase in the ratios during the post-war period as compared with that including years prior to 1919.

entirely similar to that which has been established for specialty stores. The relative amount outstanding increases in time, with the growth of the city and with the expansion of the store. Whatever are the differences between department stores and ordinary stores with regard to the actual volume of outstandings—as to their existence and extent, we can not speak confidently in the absence of sufficiently detailed statistics—in considering the effects of the alleged progressive substitution of departmentized for ordinary stores, these differences count for less than would otherwise have been the case because of the similarity of tendencies.

The upshot of the discussion is that we can come to no definite decision regarding the modifications which our main conclusions must undergo in order to square them with the facts concerning department stores. We know, however, that the share of the total amount of retail trade handled by department stores is not large, and that it does not grow rapidly, if it increases at all. We believe also that if the relative amount of credit outstanding for department stores is less than for comparable specialty stores, the deficiency in credit resulting from the substitution of the former for the latter is sure to be remedied with the passage of time, as well as with the growth of the department store and of the city in which the store is located.

The Chain Store. We have finally reached the discussion of the possible influence of chain-store growth upon the volume of credit outstanding. Chain systems are the typically modern factor in distribution and present to us a problem of peculiar difficulty. Although the share of retail business handled by them is still relatively small—it did not exceed 8 per cent in 1923, according to Nystrom—they have developed in the past at an unprecedented pace, both the number of stores controlled and the volume of business done increasing

very rapidly.[1] Moreover, careful students of the subject anticipate a continuation of this successful career, at least for the immediate future.[2] This phenomenal growth gives us so much concern because chain stores have heretofore been selling for cash only: there is no comfort to be found, then, in investigating the tendencies of credit extensions by them and in declaring that the continuous substitution of chain stores for ordinary stores merely means a temporary diminution in the volume of credit.

Nevertheless, certain characteristics of the more successful chain systems are worth examining here; they provide us with a clue to the modifications which chain stores will have to introduce into their merchandising policies if they are to spread to those lines of retailing for which until now they have shown few signs of fitness. In the grocery trade, which boasts of the most prosperous and numerous chain organizations, we notice that chain units operate mainly in the poorer districts of the larger cities, that they attempt to confine their stock to package goods, that their customers get little individual attention, even in stores not operated on the self-service plan, that goods are sold on a cash-and-carry basis with a special charge for deliveries, if

[1] The Federal Reserve Board index of average monthly sales gives a separate figure for chains in each of the retail lines. When we weigh these indexes by the amount of sales on which they are based (these figures being published in the *Survey of Current Business*) and obtain thus a weighted arithmetic average of them, representing a composite index for all chains, its value by years with 1919 as a base appears as follows:

1919	100
1920	134
1921	128
1922	141
1923	171
1924	191
1925	224

[2] Thus P. Nystrom, both in his *Economics of Retailing* (although with qualifications as to the further consolidation of chains), and more specifically in his pamphlet on *Chain Stores*, p. 16, published by the Domestic Distribution Department, Chamber of Commerce of the United States (latest revised edition, April, 1926).

the latter are made at all. The grocery chains make their appeal primarily by featuring somewhat lower prices and more effective displays. In the drug-store field, where we find perhaps the second outstanding example of chain success, we observe a similar tendency on the part of the chain units away from the filling of prescriptions and toward the selling of such standardized goods as patent medicines, toilet preparations, and candy, in addition to the operation of a soda fountain and lunch counter.[1] In chain drug stores, again, we observe little individual salesmanship, no expert advice to, or guidance of, the customer, and a marked attempt to base success on the advantages of location. The sales tactics of the five-and-ten-cent chains, stressing the importance of location and of effective display, are equally well known. These illustrations are perhaps sufficient to suggest that credit accommodation is one of a number of services which the chain store can not offer to its clientele, because it follows the principle of "the goods selling themselves." It expects that the customer will step into a conveniently located store with a decision formulated in advance to buy a specific brand of a particular commodity, his decision being influenced by the extensive advertising in the public prints and through window and counter displays and not a whit by the effective argument of the salesman.

In the lines selling nationally advertised brands in a form needing no adaptation to the individual idiosyncrasies of the consumers; in the lines where single purchases are small, so that the consumer does not deliberate in selecting the most desirable variety of the good which he needs; in the cases in which a reduction of price carries a strong appeal—in all of these fields the services of which a chain store deprives its customers

[1] See Hayward and White, *Chain Stores, Their Management and Operation*, 2nd ed., McGraw Hill, 1925, p. 388.

appear insignificant when compared with the advantages of convenient location and lower price which it offers. These are the fields in which the chain stores have all the chances to make good and in which they have succeeded in the past. Thus, Nystrom has singled out groceries, drugs, notions and tobaccos as those lines in which the proportion of the total business handled by chains is greater than the average for the entire retail field.[1] Grocery chains are accordingly confining themselves to poor and middle-class neighborhoods where, judging by a New York investigation,[2] even the individually owned grocery stores sell much less on a credit-and-delivery basis than the stores in the wealthy neighborhoods.

In the other lines of retail trade, in which nationally advertised brands are not so important and individual attention to the customer in the store counts for more, and in which the reduction in price offered by the chain appears paltry compared with the value of the purchase, the disadvantages of the chain stores loom larger, and consequently they have so far not succeeded so well. In the sale of clothing, for instance, we have only

[1] *Harvard Business Review*, Vol. 3, p. 158.

[2] *Retail Grocery Stores; a Study of Certain Problems of the Retail Grocer in New York City, including the Results of Investigations Conducted during the War Period by the New York Federal Food Board and New York State Food Commission*, Albany, 1922. The corresponding percentages for stores in various neighborhoods are:

	Neighborhood		
	Poor	Middle-Class	Wealthy
Percentage of business delivered....	10 0	32.7	86.6
Percentage of credit extended......	19 4	27.0	75.1

On pp. 16–19, we find an analysis purporting to show that the gross margin in grocery stores in the poor and middle-class neighborhoods would not be sufficient to cover expenses, were 100 per cent of the business done on a credit-and-delivery basis.

179 chains—a small number compared to the 1,300 of the grocery chains.[1] Moreover, most of the clothing chains control a small number of stores and are entirely local in character. In these chains, the centralization of management is less pronounced and the responsible employees in each unit-store manifest, accordingly, more initiative and a greater interest in their work. In this connection, we may notice the development of a number of local instalment clothing chains, which prosper and multiply in spite of the obvious risk involved in this business.[2] As a sign of what we may anticipate in the future, we shall also mention here the decision of a women's apparel chain to allow the opening of charge accounts in its store located in Richmond, Va.[3] If we agree with P. H. Nystrom that it is in the dry-goods and ready-to-wear field that chains are likely to develop most rapidly in the immediate future,[4] should we not add that this growth will in all probability be accompanied by a modification of the strictly cash merchandising policy in a manner which will permit chain stores to meet the competition of ordinary stores in those localities and in those particular branches of

[1] Nystrom, *op. cit.*, p. 268.

[2] Godfrey M. Lebhar, "Chain Store Progress," in the January, 1927, issue of the *Chain Store Age*, p. 18. See also in the *Retail Ledger*, 1924, first April issue, a communication headlined *Credit Chain Will Open a New Unit.*

[3] In the first March issue of the *Retail Ledger* for 1924, we may read the following news item, entitled *Chain Announces New Credit Policy*, and dated Richmond, Va., March 4:

"Even chain-store organizations are feeling the pressure of spreading retail policy of liberal credit granting.

"The Lerner Blouse Company, which operates stores throughout the country and sells its merchandise on a cash basis, recently announced that from now on it would offer its customers charge accounts.

"Richmond is known as a strong credit city. It is estimated that 75 per cent of the retail business done here is on a credit basis, and it is thought that this condition was responsible for the Lerner people installing charge-account service."

The manner in which this piece of news was written up, as well as the fact that this breaking-away from the strict cash policy occurred in the stronghold of retail credit, Virginia, are characteristic and suggestive of what may be expected in the future.

[4] P. H. Nystrom, *Chain Stores*, p. 16.

the business in which credit sales are customary? Professor D. Sanderson, discussing the possibility of chains gaining the farmers' trade, suggests also that they might follow the example set by co-operative stores and finance the farmers' purchases through subsidiaries established specially for this purpose.[1]

Our conclusion regarding chain systems is thus that they have so far strikingly succeeded only in those branches of the distributive business which are susceptible of the greatest degree of standardization, in which the goods can easily sell themselves, once the prospective buyer is in the store. The chain stores have not done so well where individual tastes have greater sway, where the customer is likely to deliberate more before purchasing, and where as a consequence personal persuasion is important. They can succeed in the latter lines only when and if the principle of centralization of management is relaxed to an extent permitting the local store manager to offer the customer a number of services in addition to the bare mass of the good purchased, among these services being that of waiting for a part of the payment in those cases in which the experience of ordinary stores has shown it to be a convenience essential to the customer. If this is true, then the experience of chain stores in the past in extending credit has little bearing upon the influence which we may anticipate the expected growth of chain systems to exert on the volume of credit outstanding for retail trade. Heretofore chain stores have occupied and exploited those cash-sale fields which existed before they appeared; they have produced no visible transformation of a credit sale into a cash sale. If chains are in the future to do an extensive business in fields in which credit sales are now customary, they can achieve success

[1] Dwight Sanderson, *The Farmer and His Community*, Harcourt, Brace and Co., 1922, p. 52.

only by adjusting themselves in some way to the needs of their clientele. The volume of credit outstanding will thus not be appreciably affected by the substitution of chain stores for ordinary stores.

3. Summary

We have discussed all of those processes of substitution of new types of retail institutions for old ones which may have unfavorably affected the validity of our conclusions regarding tendencies in the volume of retail credit outstanding. The shift of the rural and small-town consumer away from the general store and toward the mail-order house is conditioned by the same circumstances and does not affect the credit situation any more than a similar process observable for ordinary stores and duly noticed in our several studies. If the volume of credit outstanding is somewhat diminished in consequence of these changes of allegiance, this diminution is more than offset by the increase in credit for the larger cities. The popularity of department and chain stores with the urban population has not, we believe, had any depressing effect on the amount of credit, department stores granting as much credit as ordinary stores on those articles which are customarily sold on time, and chain systems failing to develop in those retail lines where credit is an essential convenience to the purchaser.

If this is true, the tendencies established as a result of our analysis of ordinary stores need no modification in order to apply to retail trade as a whole. On the contrary, we may now state with still greater assurance that the relative amount of retail credit outstanding is high in small towns, decreases as we go to somewhat larger cities, and increases again when we reach the cities with a population of 50,000 or so, rising after that with the size of the population center. The truth of the statement concerning the increase in credit with the size of

the establishment remains altogether unaffected by our discussion of the newer retail institutions. Similarly, the tendency of credit, with the passage of time, to decline or to remain stationary in smaller towns and to increase in larger cities receives additional confirmation when account is taken of the passing of the general stores and of the prosperity of mail-order houses. In the same way, the statement as to the tendency for the larger stores constantly to increase the relative amount of credit outstanding has not been invalidated; we must merely lay greater emphasis on the specialization among large establishments as to cash and credit business, and on the fact that the distributive agencies preferring to sell for cash include, in addition to some ordinary stores, many department stores and most chain systems. Finally, we may reaffirm our anticipation of an increase in retail credit in view of the tendencies established, operating as they do under the conditions of progressing urbanization and mercantile centralization.

APPENDIX FOUR

THE MERCHANDISE STUDY

Part One

THE PIANO BUSINESS

Under the Direction of

Robert A. Love

Part Two

THE BOOK TRADE

Under the Direction of

Miss Esther McGill

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Part One

THE PIANO BUSINESS

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THE BOOK TRADE

THE MERCHANDISE STUDY

Part One
THE PIANO BUSINESS

1. Introduction

A number of factors made it appear desirable to seek information concerning the experience of the piano industry with instalment selling. In the first place, piano dealers have made a long trial of this method of merchandising and have probably accumulated the most complete statistics available on the subject. As a consequence, many of the irregularities which characterize instalment selling in the industries that have only recently adopted the instalment plan have probably been eliminated from the instalment selling of pianos. Secondly, the piano appears to be a commodity which possesses many of the characteristics usually thought of as prerequisites to the extension of instalment credit. Durability, high price, a relatively slow rate of depreciation, and weight and bulk (which make it difficult for the purchaser to abscond with it)—all of these features are deemed assets by piano dealers in judging the adaptability of the piano to the instalment plan. Thus, in studying the experience of piano firms, we stand a good chance of securing a picture of the working of the instalment plan under favorable conditions.

Moreover, the reporting firms are primarily dealers in pianos, and for this reason their experience may be considered more typical than that of firms with which the instalment policy is more or less in the nature of an advertisement, and subordinate to the purpose of build-

ing up a wide patronage for other goods not sold on instalment.

Thanks to the intercession of Mr. Smith and his associates of the Music Industries Chamber of Commerce, various piano companies, through an arrangement whereby the identity of the firms would in no way be disclosed, agreed to give us confidential information about their business. As a result, we have obtained the experience of firms whose business comprises about 10 per cent of the total volume of the retail piano sales for this country. The reporting firms may be characterized briefly as follows:

Company A is considered as typical of a large merchandising organization which is operating a number of stores.

Company B, operating a number of stores in the vicinity of a large city, carries pianos at prices which vary from the lowest to the highest.

Companies C and D have a tremendous volume of sales in stores scattered over the entire country. Their line includes instruments in the upper price classes as well as some that appeal to people of moderate means.

Company E is a comparatively small one-store firm located in a large city. It sells a quality product which appeals to the well-to-do and to those of artistic tastes.

Company F does a large volume of business through a number of stores located in a metropolitan area. Its sales include a wide price range.

We may make a further observation pertaining to the nature of the reporting firms. Their reputation for upholding high standards gives evidence that their records are as exact and as illuminating as any to be found. At the same time, the high level maintained in their business practices leads us to believe that their oper-

ations represent the cream of the instalment business in the piano industry.

The particular items covered in the data will now be the subjects of separate analysis.

2. Analysis by Items

A. The Percentage of Pianos Sold on the Instalment Plan
B. Cash-Down Payment
C. Trade-In Allowances
D. The Relation of Instalment Paper to Instalment Sales
E. The Amount of Instalment Paper Outstanding
F. The Percentage Collected on the Average of the Balance Due for the Period
G. The Percentage Collected on Maturities and on Items Past Due (The "Efficiency Figure")
H. Delinquencies
I. Repossessions
J. Losses on the Repossession Transaction
K. Losses Related to Instalment Paper
L. Cancellations and Losses Related to the Average Balance Due
M. Analysis of Individual Companies

A. THE PERCENTAGE OF PIANOS SOLD ON THE INSTALMENT PLAN

(Table I, Chart No. 1)

The percentage of pianos sold on instalment by five different firms[1] is shown in Table I and the results are presented graphically on Chart No. 1.

Comparison of Companies. It is evident from the curves that there is a marked variation in the percentages sold on the instalment plan. Thus, for the first half of 1926, only 31.2 per cent of the sales of Company F were made on instalment, while Company A and Company C have consistently sold a much larger proportion (from 83.9 per cent to 89.2 per cent).

Company B and Company E, with instalment sales ranging from 58.3 per cent to 69.7 per cent, occupy positions approximately mid-way between the two

[1] Of these five firms, one is divided into two parts, which we have designated as Companies C and D. Owing to the fact that in some instances records are kept for both parts combined, while in others we have records for only one part, it seemed advisable to treat the two parts as separate companies.

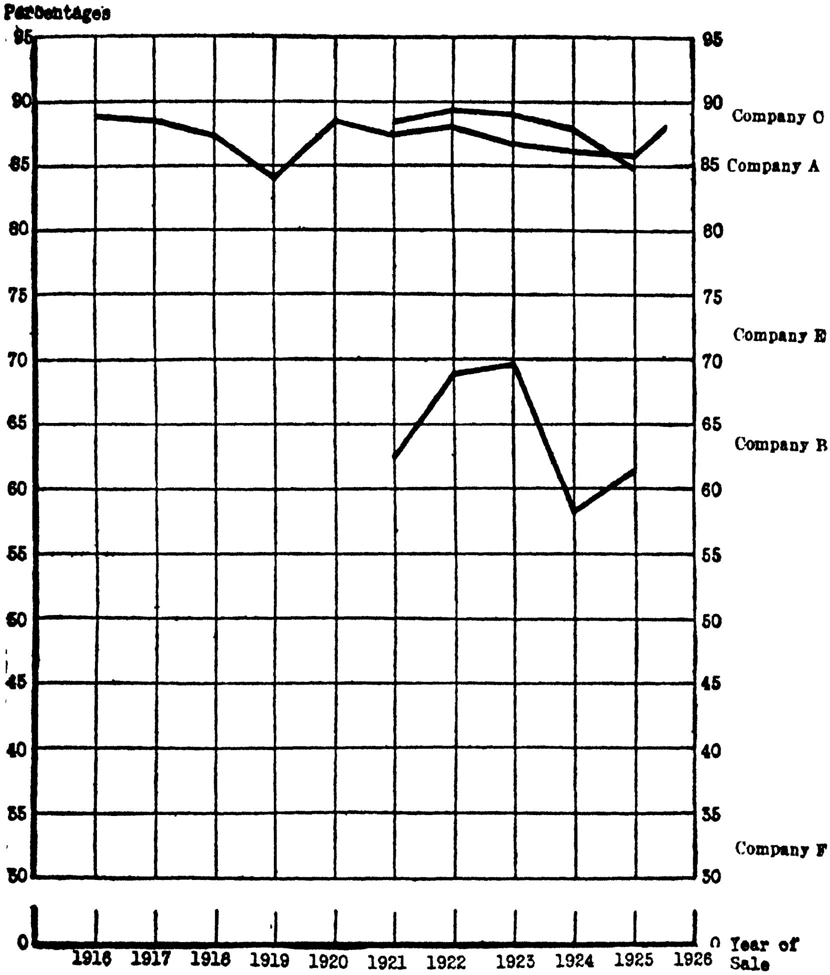

CHART NO. I. THE PERCENTAGE OF THE AMOUNT OF GROSS SALES MADE ON THE INSTALMENT PLAN

TABLE I

THE PERCENTAGE OF THE AMOUNT OF GROSS SALES MADE ON THE INSTALMENT PLAN

Year of Sale	Companies				
	A	B	C	E	F
1916	—	—	88 8	—	—
1917	—	—	88 5	—	—
1918	—	—	87.3	—	—
1919	—	—	83.9	—	—
1920	—	—	88 2	—	—
1921	88 3	62 5	87 5	—	—
1922	89 2	68.8	88 1	—	—
1923	88 9	69 7	86 7	—	—
1924	87 6	58.3	86.3	—	—
1925	84 9	61.5	85.8	67 9	—
1926 (1st half)*	—	—	87 8	—	31 2

* Since the figures for 1926 are for only half a year, they are not comparable with those of the previous years.

extremes. If we disregard Company F, whose figures are unreliable because they represent business for only half a year, the percentages of the four remaining companies may be considered as representing two distinct levels. Of these, the higher, containing percentages in the upper eighties, would undoubtedly be considered by the industry as the more typical.

When we endeavor to arrive at the volume of instalment paper, we must subtract the down payments, whether in the form of cash or of a trade-in. These items are treated in terms of percentages of the total volume of instalment sales. Certain aspects of the experience of the various firms in regard to these two items are discussed below.

B. CASH-DOWN PAYMENT

(Table II, Chart No. 2)

The first question concerns the amount of the selling price collected in cash at the time of sale.

The answer to this question is of significance to both the purchaser and the dealer; first, because of the way in which the magnitude of the down payment affects the status of each at the time of sale; and second, because of the extent to which it influences their respective positions during the time in which the instalment obligation is being liquidated.

At the time of sale, the initial cash payment, of any size whatever, may be considered as an obstacle which causes many purchasers to hesitate and which actually deters some, who are discouraged by the difficulty of securing the money necessary to meet the initial payment. Thus, the size of the down payment determines, in the case of many consumers, which article shall be bought. In other words, habits of consumption are definitely influenced by down-payment requirements. It is the fight for his share of the consumer's purchasing power that induces the dealer to lower the down payment. This desire to reduce the down-payment requirement for the purpose of increasing sales is, however, counterbalanced by two considerations. In the first place, a lenient policy in respect to the cash payment is supposed to attract purchasers who are devoid of financial responsibility. In the second place, a small initial payment denotes a low ratio of market value to unpaid instalments, which in turn may mean that the article does not offer a satisfactory security.

Comparison of Companies. The various experiences as regards the cash-down payment are presented in the accompanying table.

An examination of Chart No. 2 discloses the proximity of the curves showing the experiences of Companies C and A. The arithmetic average of the percentage of instalment sales represented by cash-down payments during the period 1921–1925 was 9.8 per cent for Company A and 9 per cent for Company C. These two may

thus be considered as being in the same class. The available data also afford some justification for placing

TABLE II

THE AMOUNT OF CASH-DOWN PAYMENTS RELATED TO THE VOLUME OF INSTALMENT SALES (EXPRESSED IN PERCENTAGES)

Year of Sale	Companies				
	A	B	C	E	F
1916	—	—	7.1	—	—
1917	—	—	7.0	—	—
1918	—	—	10 0	—	—
1919	—	—	12 8	—	—
1920	—	—	11.4	—	—
1921	9 8	25.0	9 4	—	—
1922	—	24 9	8.3	—	—
1923	11 0	17 7	9 9	—	—
1924	—	15 1	9.3	—	—
1925	8 9	12 9	8 3	17.3	—
1926 (1st half)	—	—	7.6	—	25.8

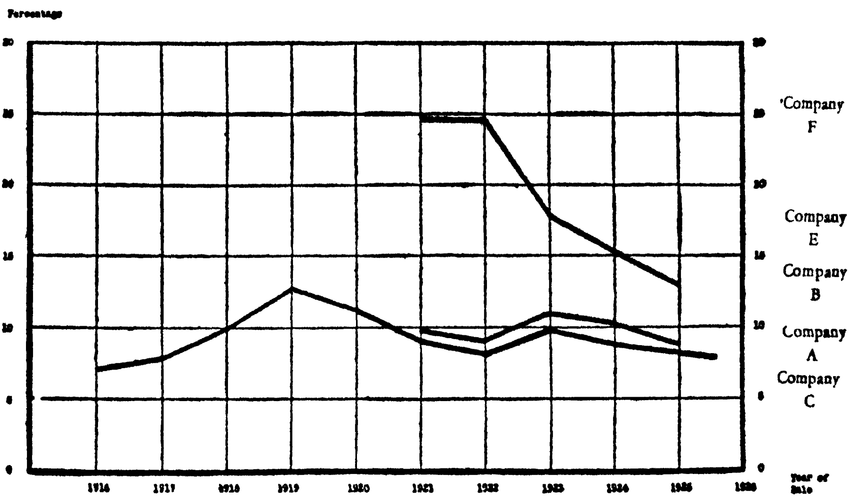

CHART NO. 2. THE AMOUNT OF CASH-DOWN PAYMENTS RELATED TO THE VOLUME OF INSTALMENT SALES (EXPRESSED IN PERCENTAGES)

in a separate class Companies B and E, whose records for 1925 show down payments of 12.9 per cent and 17.3

per cent respectively. In former years, Company B's percentage was considerably higher than either of these figures. In fact, during 1921 and 1922, approximately one-fourth of the volume of this company's instalment sales was collected in the form of cash-down payments. This proportion was attained in later years only by Company F, whose figure of 25.8 per cent remains unequaled by other firms. It may therefore be said that a comparison of the practices of the various firms reveals the fact that uniform practices have come to prevail, if at all, not in the industry as a whole, but rather in the various strata of the business.

Another avenue of approach to the subject is that of considering the actual dollar amount of the down payment. Data from Companies C and D covering the annual experience on several thousand pianos show an average cash-down payment from 1908 to 1917 of from $20 to $30. From 1918 to 1926, it ran from $43 to $63. These figures have a bearing on the relative position of the piano in the competitive fight for the consumer's purchasing power. The lower the first payment, the more numerous are the goods with which the piano is on a par.

It is seen that, in spite of the minor decline which has come since 1923, the actual dollar amount of the down payment at present exceeds that of the earlier years. A recent decline is of significance because of the fact that it has accompanied an increase in business prosperity, whereas the common belief (reinforced by the experience of Company C) is that the effect of good business conditions is to increase the size of the down payments. If the decrease in the percentage of the down payment has come in spite of the fact that business conditions have exerted an influence in the opposite direction, it is reasonable to conclude that other factors are working steadily toward a reduction of the cash-down payment.

It is safe to surmise that one of these is the spread of instalment selling to other commodities. In other words, piano companies have evidently found it desirable to join the procession to the extent of making some concession in the initial cash payment, in order to place the piano on a par with other commodities competing for the purchasing power of the consumer.

C. TRADE-IN ALLOWANCES

Comparison of Companies. The experience of each of the companies may be learned from the following table.

TABLE III

TRADE-IN ALLOWANCES RELATED TO INSTALMENT SALES (EXPRESSED IN PERCENTAGES)

Year of Sale	Companies				
	A	B	C	E	F
1916	—	—	1 9	—	—
1917	—	—	1 9	—	—
1918	—	—	1 5	—	—
1919	—	—	1 5	—	—
1920	—	—	1 3	—	—
1921	9 9	2 6	1 9	—	—
1922	8 6	2.6	2 7	—	—
1923	8 8	2 3	2 4	—	—
1924	9.0	2 3	2 7	—	—
1925	10 4	2 1	2 3	9 6	—
1926 (1st half)	—	—	2 4	—	4 3

Companies B, C, and F may be grouped together in contrast to Companies A and E. Of special significance is the fact that in a majority of the firms the allowance figure falls under 5 per cent. This low percentage is doubtless made possible by the small number of instruments accepted as trade-ins. In this respect, pianos differ from automobiles, for example, largely because there is no such incentive for the owner to give up the

old commodity and to buy a new one. As a result, the piano business is not threatened with the danger of a "used-piano problem," which would rival the evils of the "used-car problem" in the automobile industry.

The year-to-year movements of the percentages suggest that the trade-in allowance is being employed as a

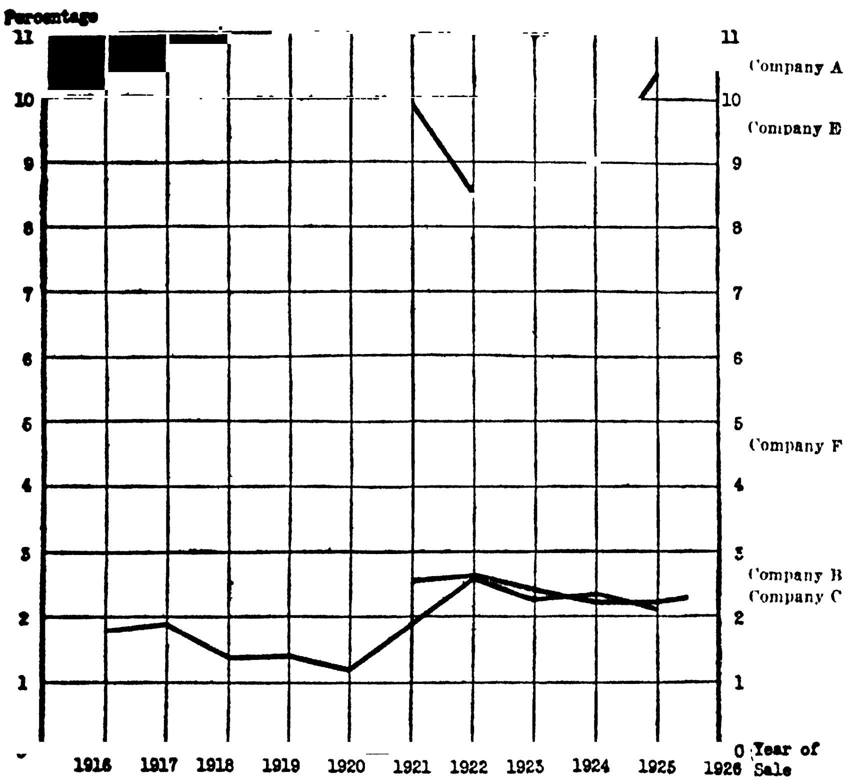

CHART NO. 3. TRADE-IN ALLOWANCES RELATED TO INSTALMENT SALES (EXPRESSED IN PERCENTAGES)

competitive weapon for the purpose of bolstering up sales in time of depression. The future use of the trade-in allowance in this connection will probably be limited by the nature of the commodity itself and, perhaps to a less degree, by the work done by the larger companies

in an effort to discourage practices that would jeopardize the welfare of the industry as a whole.

D. THE RELATION OF INSTALMENT PAPER TO INSTALMENT SALES

(Table IV, Chart No. 4)

In a sense, the ratio of instalment paper to instalment sales is a function of the down payment and of the trade-in allowance. It so happens, therefore, that the treatment of instalment paper at this point serves, incidentally, as a substitute for a consideration of the total down payment (involving the sum of the cash payment and the trade-in allowance.)

Comparison of Companies. If we take the last years for which we have data, Company F is seen to have the most conservative figure. Arranged according to the magnitude of their percentages, the order of the companies would be E, F, B, and C. Complete records are given in Table IV.

TABLE IV

INSTALMENT PAPER RELATED TO THE VOLUME OF INSTALMENT SALES (EXPRESSED IN PERCENTAGES)

Year of Sale	Companies				
	A	B	C	E	F
1916	—	—	91.0	—	—
1917	—	—	91.1	—	—
1918	—	—	88.5	—	—
1919	—	—	85.7	—	—
1920	—	—	87.3	—	—
1921	80.3	72.4	88.7	—	—
1922	82.4	72.5	89.0	—	—
1923	80.2	80.0	87.7	—	—
1924	80.8	82.6	88.0	—	—
1925	80.7	85.0	89.4	73.1	—
1926 (1st half)	—	—	90.0	—	69.9

The lenient policy of Company B in allowing low cash payments caused the percentage of instalment paper to rise from 72.4 per cent in 1921 to the high level of 85 per cent.

The data at hand indicate that the proportion of the amount of instalment sales which reaches the stage of instalment paper ranges approximately from 70 per cent to 90 per cent.

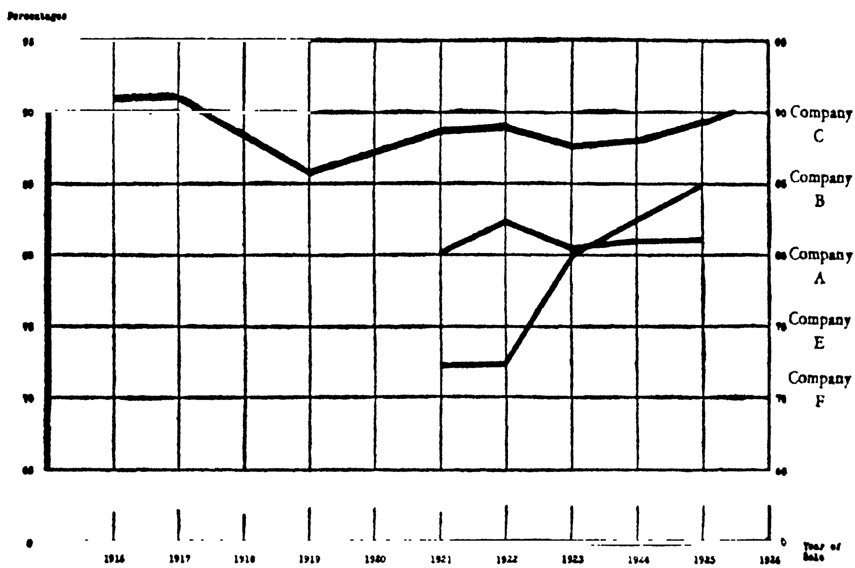

CHART NO. 4. INSTALMENT PAPER RELATED TO THE VOLUME OF INSTALMENT SALES (EXPRESSED IN PERCENTAGES)

It is commonly thought that in times of business prosperity a smaller proportion of the amount of instalment sales is represented by instalment paper. This belief is re-enforced by the available information, except that during the last two years there has been an upward movement in the curves of Companies A, B, and C. This upward movement can not be attributed to a general decline in business prosperity; it must, therefore, be ascribed to other factors. One tenable explanation of the rise is that the piano is feeling the pressure

of competition from other commodities, and that the companies accordingly find it necessary to be more lenient in extending credit.

E. THE AMOUNT OF INSTALMENT PAPER OUTSTANDING (Table V)

We have now arrived at a stage in our discussion at which we are ready to treat certain credit problems arising during the period of liquidation of the instalment paper. Before turning our attention to these, however, it is desirable to point out that the nature and the extent of these problems depend, in a measure, not only upon the volume of instalment paper resulting from time sales, but also, and more especially, upon the amount of the paper which remains outstanding at any one time. This amount is primarily a function of the volume of paper and of the length of time for which it runs. If we compare the outstandings at the end of the year with the instalment paper for the same year, we obtain a picture of the status of the dealer with respect to the extent to which the credit business of past periods is carried over for collection in the future. The length of time for which the credit is outstanding, as suggested by the following series, is the actual time, rather than the time specified in the terms of sale. In this particular series, we have made constant one of the factors (the amount of instalment paper), which influences the magnitude of the outstandings, and accordingly have a variation in the figure which primarily reflects the results of diverse practices regarding the length of the instalment period.

Comparison of Companies. The accompanying ratios furnish the basis for placing the companies in rather definite categories in so far as the proportion of their instalment paper which remains outstanding is concerned. Company F, with a figure of .61, has the lowest ratio of

TABLE V

THE RATIO OF THE UNCOLLECTED BALANCE AT THE END OF THE PERIOD TO THE INSTALMENT PAPER FOR THE PERIOD

Years	Companies				
	A	B	C	E	F
1909	—	—	1.21	—	—
1910	—	—	1.19	—	—
1911	—	—	1.27	—	—
1912	—	—	1.18	—	—
1913	—	—	1.17	—	—
1914	—	—	1.42	—	—
1915	—	—	1 41	—	—
1916	—	—	1.44	—	—
1917	—	—	1.53	—	—
1918	—	—	1 51	—	—
1919	—	—	1.32	—	—
1920	—	—	1 19	—	—
1921	.76	.81	1.22	—	—
1922	.79	.92	1.15	—	—
1923	.75	.89	1.20	—	—
1924	.74	.93	1 29	—	—
1925	.76	.85	1 19	75	—
1926 (1st half)	—	—	1 23	—	.61

outstandings. This is probably made possible by the actual completion of instalment payments in an average period of less than 14 months after sale.[1] In the next class, we may group Companies A and E, each with outstandings which represent almost exactly three-fourths of its annual instalment paper. This may likewise be assumed to be the result of average terms of approximately 17 months.

Outstandings of Company B represent from .81 to .93 of its annual instalment paper—a situation which is apparently the result of terms ranging from 18 to 21 months.

[1] *See* Vol. I, p. 105, note. In arriving at such an approximation, we use the formula $(n-1)/2k-R$ and solve for n. Thus if $R = .61$ (as was the case with Company F), and if we substitute 12 for k, we have $(n-1)\ 24 = .61$, and $n = 13.64$.

The experience of Company C affords an interesting picture of a firm whose lenient terms are reflected in considerably higher ratios. With the ratios ranging from 1.15 to 1.53, we find a situation where the accounts have continued on the books for approximately 30 months.

F. THE PERCENTAGE COLLECTED ON THE AVERAGE OF THE BALANCE DUE FOR THE PERIOD

(Table VI, Chart No. 5-11)

The experience of Companies C and D is given in the following table and is presented graphically on Chart No. 5-11.

TABLE VI

THE PERCENTAGE COLLECTED ON THE AVERAGE OF THE BALANCE DUE FOR THE PERIOD
(Experience of Companies C and D Combined)

Years			Years		
1908	1st half	31.26	1918	1st half	27.09
	2nd half	32.10		2nd half	33.48
1909	1st half	33 00	1919	1st half	32.39
	2nd half	33 93		2nd half	36 52
1910	1st half	31.56	1920	1st half	36.57
	2nd half	31.59		2nd half	34.93
1911	1st half	29 69	1921	1st half	30.77
	2nd half	28 63		2nd half	29.79
1912	1st half	28.41	1922	1st half	28.69
	2nd half	28.57		2nd half	31.51
1913	1st half	27 20	1923	1st half	29.38
	2nd half	27.78		2nd half	30.56
1914	1st half	24 88	1924	1st half	30.30
	2nd half	24.19		2nd half	31.23
1915	1st half	24.14	1925	1st half	31.29
	2nd half	25.61		2nd half	31.13
1916	1st half	25.76	1926	1st half	30.09
	2nd half	27.12		2nd half	....
1917	1st half	25.78			
	2nd half	26.74			

The primary purpose of this table is to disclose the variations in company collections.

If we assume conditions which would minimize the

influence of the minor factors affecting the data, the figures constitute a contribution to the knowledge of a firm which is interested in determining its standing with respect to the relation between collections and the sums to be collected. What the firm really possesses is information on the turn-over of receivables. The figure of 30.09 per cent for the first half of 1926 would ordinarily be spoken of as a turn-over of .6 on an annual basis. Even though the size of this figure is influenced by various other considerations, the primary factor involved is the length of time allowed on the paper.

Next in importance to the turn-over of receivables, the year-to-year fluctuations are of most interest. A rise from the first half of 1908 to the end of 1909 was interrupted by a fall which continued steadily until 1915. From this year on, there was a more or less steady upward climb until a peak was reached in the first half of 1920. In the second half of this year, however, the break came, and the curve descended to low points for 1921 and for the first half of 1922. After the drop in the curve for the first half of 1923, there is noticeable a very slight incline, which continued until 1926.

G. THE PERCENTAGE COLLECTED ON MATURITIES AND ON ITEMS PAST DUE (THE "EFFICIENCY FIGURE")

(Table VII, Chart No. 5–1)

When we turn to an examination of the ratio of the amounts collected on maturities and items past due to the maturities for the period, we are dealing with a figure which may be considered to reflect primarily the collection experience of the firm. The fact that the percentage discloses the relation between what has actually been accomplished and the goal of the collection activities[1] has given rise to the practice of terming

[1] The collection of all maturities for the month can not be considered as an absolute ideal; for there are past-due accounts upon which payments are made.

the percentage the "efficiency figure." Chart No. 5-1 shows an efficiency curve obtained by plotting the following percentages of Companies C and D combined.

TABLE VII

THE PERCENTAGE COLLECTED ON MATURITIES AND ON ITEMS PAST DUE (THE "EFFICIENCY FIGURE")

Experience of Companies C and D Combined

Years			Years		
1908	1st half....	85 39	1918	1st half....	93.84
	2nd half....	85.41		2nd half....	96.04
1909	1st half....	90.58	1919	1st half....	96.68
	2nd half....	89.14		2nd half....	96.53
1910	1st half....	91.90	1920	1st half....	99 50
	2nd half....	88.30		2nd half....	92.95
1911	1st half....	87.58	1921	1st half....	87 08
	2nd half ...	85.35		2nd half....	85 00
1912	1st half ..	87.14	1922	1st half ...	86 93
	2nd half....	86.50		2nd half....	88 10
1913	1st half ...	86 79	1923	1st half....	91.20
	2nd half ...	85 13		2nd half....	89 82
1914	1st half....	85 78	1924	1st half....	89.68
	2nd half....	81 27		2nd half...	87 40
1915	1st half. ..	83.40	1925	1st half....	89 51
	2nd half ..	82 87		2nd half....	87.47
1916	1st half....	89 69	1926	1st half....	89 91
	2nd half ...	89 80		2nd half....	....
1917	1st half	90 87			
	2nd half ..	88 61			

The efficiency figures range from 81.27 per cent in the second half of 1914 to 99.50 per cent for the first half of 1920. Some indication of the general level of the curve can be obtained by taking the arithmetic mean of the percentage for each half year. This gives a result of 88.4 per cent.

The efficiency curve is especially adapted to use for the purpose of showing yearly variations. Our data begin in 1908, when poor business conditions evidently resulted in a low efficiency record. The piano industry shared in the improving business conditions, and by

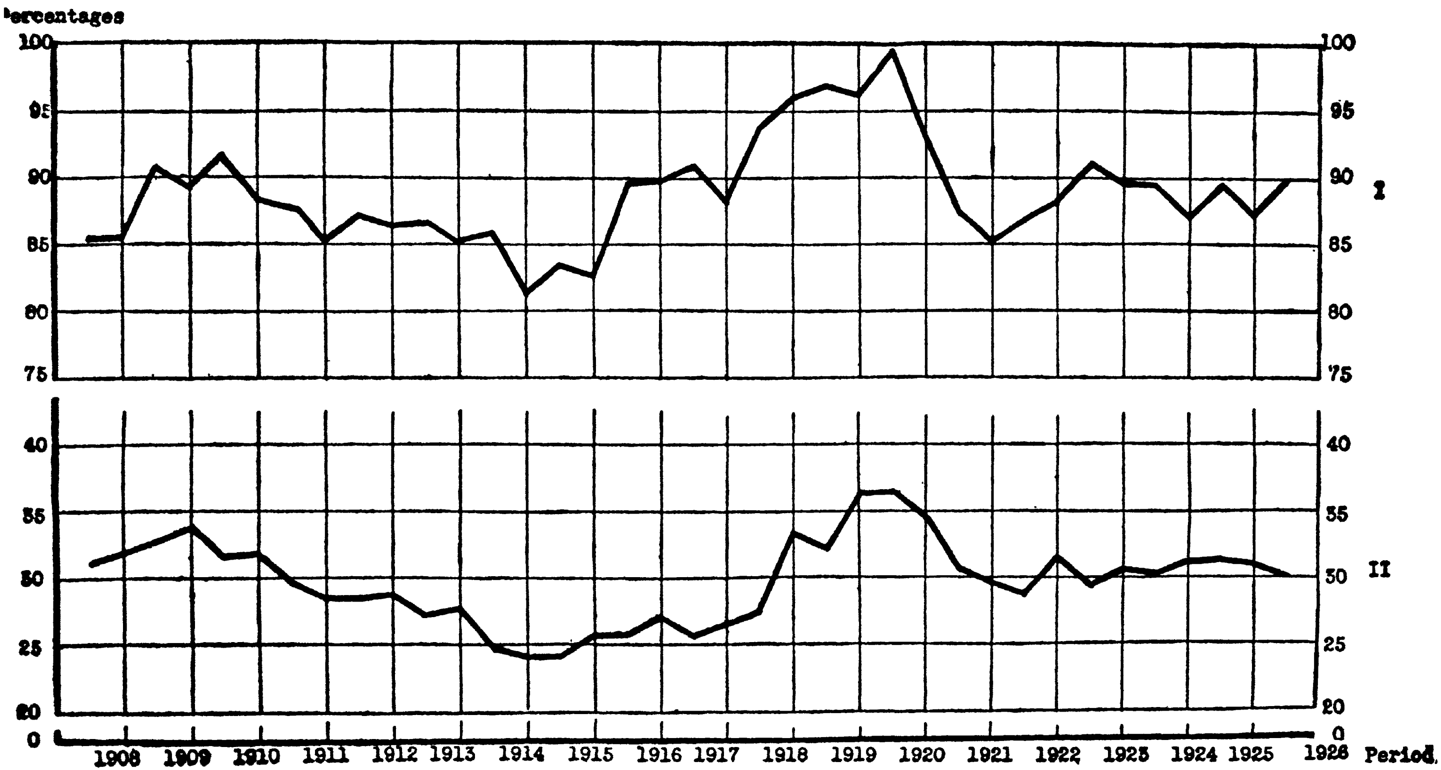

CHART NO. 5. COLLECTION EXPERIENCES OF COMPANIES C AND D COMBINED

I. EFFICIENCY FIGURE (PERCENTAGE COLLECTED ON MATURITIES AND ITEMS PAST DUE, BASED ON MATURITIES)

II. PERCENTAGE COLLECTED ON AVERAGE BALANCE

1909 the efficiency figure had reached a high level, which was maintained until the second half of 1910. The next few years witnessed a gradual decline which culminated in a sudden drop to the trough of 1914 (second half). The recovery in 1916 (first half) was followed by an almost uninterrupted rise to the high-water mark reached in the first half of 1920. In this half-year there were collected amounts aggregating 99.50 per cent of the total maturities for the period. Such an enviable record is the more significant because of the fact that collections had been good for the previous periods, so that only a small proportion of the collections can be assumed to have been made on past-due accounts.

From the 1920 peak, attained after a half-decade of steady improvement, the curve, within a year and a half, dropped to the 1921 trough, which was the second lowest for the period covered by our data. A recovery, a minor peak in 1923, perhaps a more marked seasonal, and a greater constancy in the percentages may be detected by an examination of the curve for the period since the post-war depression.

H. DELINQUENCIES

(Table VIII, Chart No. 6)

To the dealer, delinquencies are objectionable primarily because he is forced to take additional measures in order to secure the unpaid instalments. Aside from the actual outlays of money necessitated by these, a further burden is placed upon the dealer by his being compelled to carry accounts for a longer period than that arranged for in the terms of sale. Each delinquent item adds to the burden of outstandings which must be financed by the dealer. But not only does it signalize present outlays and additional financing burdens; it also serves as an omen of evils yet to come. It is the hand-

writing on the wall which presages defaults, repossessions, and ultimate losses. Because of the unwelcome nature of delinquency, its presence is usually considered as an indication that the original credit analysis or the terms of sale were faulty.

The following table presents the delinquency figures for Companies C and D in the form of the percentages of the unpaid balances[1] which were past due at the end of each half-year period on accounts over 30 days old.

TABLE VIII

THE PERCENTAGE PAST DUE AT END OF EACH PERIOD ON ACCOUNTS OVER THIRTY DAYS OLD

Years			Years		
1908	1st half....	10 13	1918	1st half.....	6 86
	2nd half....	11.37		2nd half.....	6 66
1909	1st half....	10 00	1919	1st half	6 17
	2nd half....	9.74		2nd half.....	5.62
1910	1st half....	8 54	1920	1st half	4.44
	2nd half....	8 56		2nd half.....	4 71
1911	1st half....	8.74	1921	1st half ...	6.33
	2nd half....	9.63		2nd half.....	7 37
1912	1st half....	9.22	1922	1st half.....	7.50
	2nd half....	8 92		2nd half.....	6.90
1913	1st half....	8 39	1923	1st half.....	6 20
	2nd half....	8 08		2nd half.....	6.09
1914	1st half....	8 40	1924	1st half... .	6.43
	2nd half....	10.25		2nd half.....	7 55
1915	1st half....	11.17	1925	1st half.....	7.50
	2nd half....	11.65		2nd half.....	8 18
1916	1st half....	9.10	1926	1st half	8.00
	2nd half....	8.10		2nd half.....	....
1917	1st half....	7.15			
	2nd half....	7 68			

The delinquency curve starts at a high level of 10.13 per cent for the first half of 1908, and ascends to a higher peak in the second half of the same year. From this point, the curve declines for the succeeding years; and,

[1] The figures on the unpaid balance are as of the month preceding the end of the half-year period.

CHART NO. 6. DELINQUENCIES EXPERIENCE OF COMPANIES C AND D COMBINED. PERCENTAGE PAST DUE AT END OF EACH PERIOD ON ACCOUNTS OVER THIRTY DAYS OLD

with the exception of a slight upward jump for the second half of 1911, the general trend of the curve is downward until the bad business conditions in 1914 played havoc with collections and caused the curve to leap upward to a point unknown before or since. The recovery from these dark ages of collection history was followed by a gradual decrease in the percentage of delinquencies until the desirable downward trend was halted simultaneously with the post-war break in general business activities. The difficulties of the depression gave way to better collections in 1923. The last half of 1924 witnessed the rise of delinquencies to an undesirable height, which was maintained through the first half of 1926.

I. REPOSSESSIONS

Since the repossession feature constitutes a distinctive feature of instalment selling, records on this phase of the deferred-payment transaction are of particular significance. It may be interesting to point out that the piano possesses certain characteristics which, it is claimed, render it especially adapted to the repossession feature of the instalment transaction. In the first place, it is so bulky that there is difficulty in moving it from place to place. The danger of the purchaser's absconding with it is, therefore, slight. Secondly, the piano, because of its mechanical durability and because of its wide use for purposes other than ostentation, depreciates slowly. Largely because of these major factors, it is asserted, instalment sales may be pushed to any extent whatever, even though a large number of repossessions result, without necessarily endangering the financial standing of the firm. Viewed in this light, the extent of repossessions may be considered as an indication not so much of the financial soundness of the firm as of the

extent to which the dealer is using lax extensions of credit for the purpose of increasing sales. A comparison of the experiences of the companies engaged in the instalment piano business, or a comparison of the experiences of the same company from year to year, must, therefore, be interpreted in the light of different policies or of changes in policy.

The Extent of Repossessions. The first question regarding repossessions concerns the number of articles repossessed and the amount of unpaid instalments involved in the defaults. In order to present comparable pictures of the situations for the different years and in the various companies, the number and the amount of the value

TABLE IX

THE NUMBER OF REPOSSESSIONS RELATED TO THE NUMBER OF INSTALMENT SALES FOR THE SAME YEAR (EXPRESSED IN PERCENTAGES)

Year	Companies			
	B	C	E	F
1908	—	16.4	—	—
1909	—	18.5	—	—
1910	—	17.9	—	—
1911	—	17.8	—	—
1912	—	15.7	—	—
1913	—	15.2	—	—
1914	—	20.2	—	—
1915	—	19.9	—	—
1916	—	21.5	—	—
1917	—	24.3	—	—
1918	—	27.2	—	—
1919	—	15.8	—	—
1920	—	12.8	—	—
1921	4	16.3	—	—
1922	.2	19.1	—	—
1923	.4	17.6	—	—
1924	.4	16.5	—	—
1925	.2	18.8	1.4	—
1926 (1st half)	—	19.9	—	5.9

TABLE X

THE AMOUNT OF THE UNPAID INSTALMENTS ON REPOSSESSED PIANOS RELATED TO THE VOLUME OF INSTALMENT SALES FOR THE YEAR (EXPRESSED IN PERCENTAGES)

Year	Companies				
	A	B	C	E	F
1916	—	—	20 1	—	—
1917	—	—	22 2	—	—
1918	—	—	23 2	—	—
1919	—	—	13.6	—	—
1920	—	—	10 7	—	—
1921	6 9	.4	15 4	—	—
1922	7 0	.2	18 2	—	—
1923	7 0	.3	16 1	—	—
1924	7.1	.3	16 8	—	—
1925	6 0	.16	15 9	1 8	—
1926 (1st half)	—	—	17.0	—	6 7

of the pianos repossessed have been related, respectively, to the number sold on the instalment plan and to the amount of the instalment paper for the same year. The pertinent figures appear in the accompanying tables.

Comparison of Companies. Companies B and E, with repossessions (as regards both number and dollar amount) aggregating less than 2 per cent of total instalment paper, were the firms having the lowest rate of repossessions. Companies A and F occupy a position about midway between this low level and the somewhat higher position of Companies C and D. The percentages for Company A and Company F are approximately 7 per cent. Company C, with fluctuations ranging from three points above to seven points below its arithmetical mean of 17.2 per cent, occupies a higher position on the scale. This high position is, according to the curve showing the number of repossessed articles, shared by Company D.

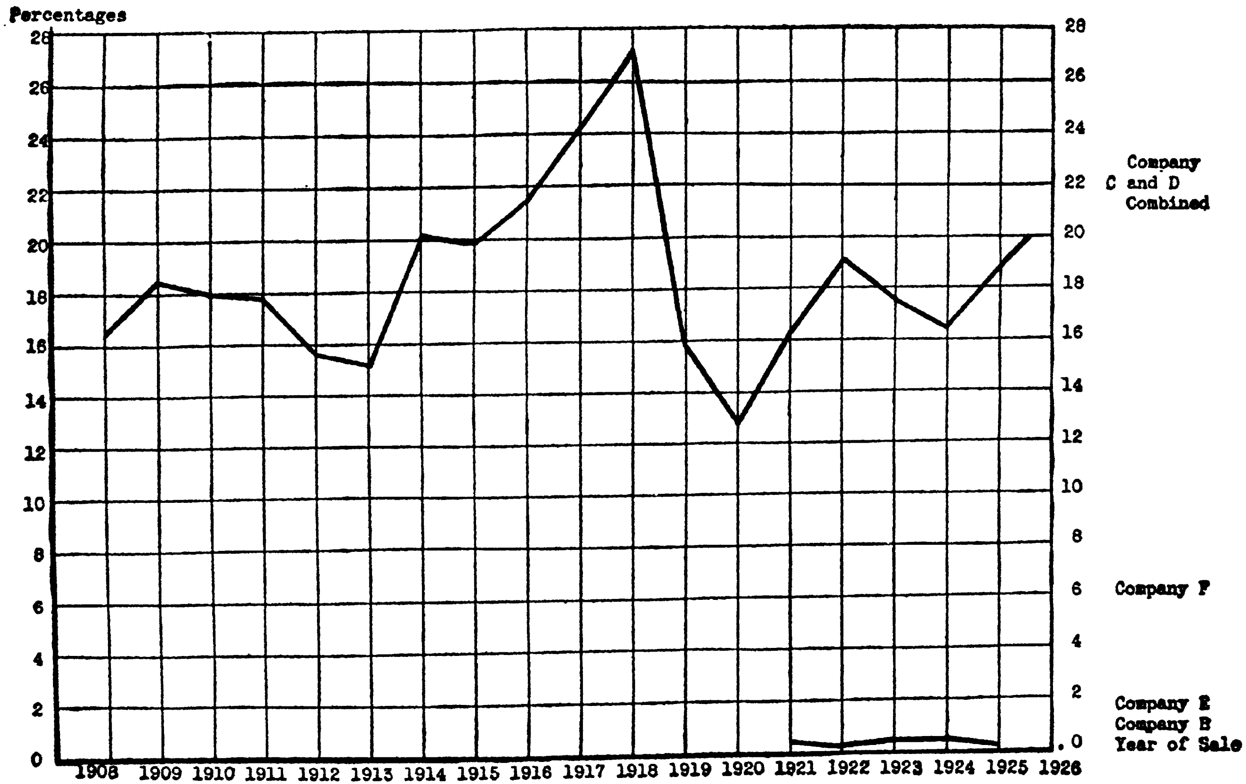

CHART NO. 7. THE NUMBER OF REPOSSESSIONS RELATED TO THE NUMBER OF INSTALMENT SALES FOR THE SAME YEAR (EXPRESSED IN PERCENTAGES)

The experiences of the various companies may be seen more clearly if we notice the number of instalment sales made for each piano repossessed during the year. This figure can easily be derived by taking the reciprocal of the ratios which, when reduced to percentages, comprise Table IX. By this procedure, we find that,

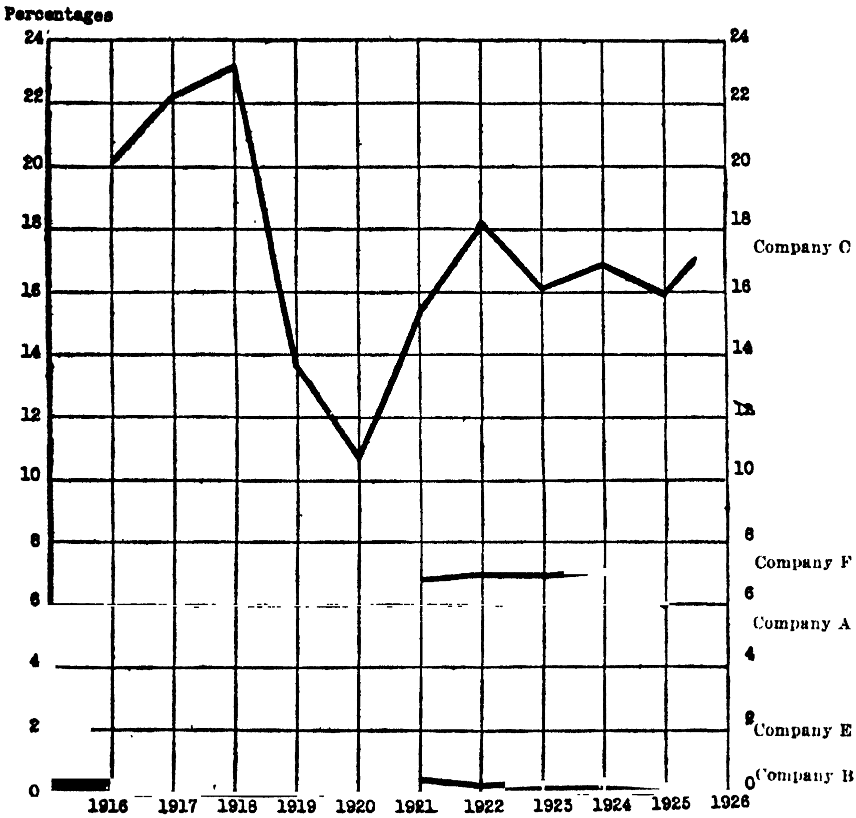

CHART NO. 8. THE AMOUNT OF THE UNPAID INSTALMENTS ON REPOSSESSED PIANOS RELATED TO THE VOLUME OF INSTALMENT SALES FOR THE YEAR (EXPRESSED IN PERCENTAGES)

in 1925, Company B sold 402 pianos on the instalment plan for every one repossessed, while Company C sold 5.3 and Company E sold 67. The corresponding figures for 1926 (first half) show that Company F made 17 instalment sales for each repossession.

J. LOSSES ON THE REPOSSESSION TRANSACTION

Thus far, the steps in the process of the instalment transaction have been traced to the point where the repossession actually takes place. Now we must pursue our investigation still further in order to determine the extent to which these repossessions result in actual loss.

In this connection, the price obtained by reselling a repossessed article is the factor of most immediate importance. As a matter of fact, the entire repossession-resale transaction may be considered as a business transaction in which the amount of the unpaid instalment corresponds to the cost of the article and in which the resale price is considered as its selling price. The success of the transaction can then be determined by taking the difference between the two items and by relating this figure to the one which shows the amount of the unpaid instalments.[1] By this procedure, we obtain a figure which shows the losses as a percentage of the dollar amount of the unpaid instalments on repossessions.

The percentages given in Table XI are presented graphically on the following page, on Chart No. 9. This experience is of most interest because of the broad year-to-year movements which suggest negative correlation between the percentage lost and general business conditions.

Dollar Losses on Each Repossession Transaction. In connection with the subject of repossessions and losses, the question is frequently asked: what is the amount of the unpaid instalment involved in the repossession transaction? A second query pertains to the actual

[1] This method does not take account of the various expenses connected with the repossession transaction. The "loss" treated in the above discussion is therefore comparable with the margin between the wholesale price and the retail price of a commodity, rather than with the total loss of the entire business transaction, in which all overhead costs would be included.

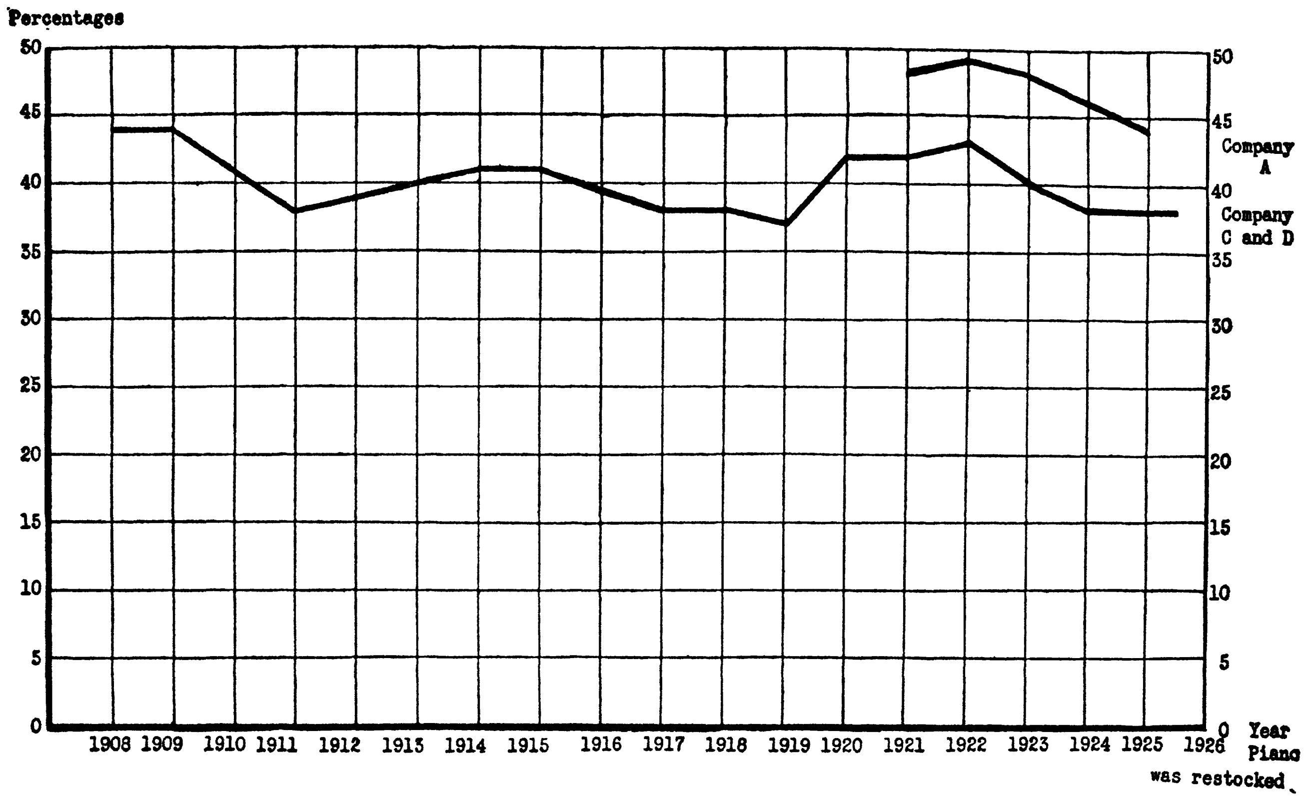

CHART NO. 9. PERCENTAGE OF UNPAID INSTALMENTS LOST BY RESTOCKING REPOSSESSED PIANOS

TABLE XI

THE PERCENTAGE OF UNPAID INSTALMENTS LOST BY RESTOCKING REPOSSESSED PIANOS

Year	Percentages	
	A Company	C and D Companies
1908	—	49
1909	—	44
1910	—	44
1911	—	38
1912	—	39
1913	—	40
1914	—	41
1915	—	41
1916	—	40
1917	—	38
1918	—	38
1919	—	37
1920	—	42
1921	48	42
1922	49	43
1923	48	40
1924	46	38
1925	44	38
1926	—	38

dollar amount lost on each repossessed instrument. Still a third inquiry is raised by investigators who desire information concerning the average amount which would have to be added to each article sold on the instalment plan, in order to absorb the losses from those purchasers who do not complete their payments. The averages of these three items for Companies C and D combined are presented in the following table.

These figures afford the only clue we have to the stage of payment at which the repossession takes place. Deductions from unofficial estimates for the two reporting companies result in a figure of $500 as the average selling price of pianos sold in 1925. Allowing a deduction

TABLE XII

REPOSSESSION LOSSES

Years	Average Amount of Unpaid Instalments	Average Loss per Piano Repossessed	Average Loss per Piano Sold on Time
1908	$206	$ 90	$16
1909	205	89	15
1910	225	93	16
1911	233	88	17
1912	240	94	16
1913	259	103	17
1914	263	107	23
1915	271	111	25
1916	282	114	26
1917	299	115	29
1918	315	120	30
1919	349	130	25
1920	418	175	21
1921	456	191	32
1922	432	187	36
1923	422	170	34
1924	403	154	32
1925	386	146	29
1926	—	—	—

of 10 per cent for the cash payment and the trade-in allowance, there would remain $450 as the amount of the instalment note of the average purchaser. If this amount is broken up into, say, thirty monthly payments of $15 each, we see that in the difference between the total amount of the instalment note and the amount of the unpaid instalments ($450 minus $386 equals $64) we have a figure which barely exceeds the sum of four monthly payments. Another way of describing the situation is to state that repossession takes place when only about 14 per cent of the instalment paper has been liquidated. On the other hand, it may be observed that if we include the down payment, the customer has actually paid almost 23 per cent of the selling price of the piano. These tentative results suggest a situation in

the piano business which resembles that to be found in the automobile industry, where a large percentage of the defaults occurs before any payment is made, and where the majority of the defaults take place at an early stage in the progress of the payments.

K. LOSSES RELATED TO INSTALMENT PAPER

We have up to this point been treating losses in relation to the repossession transaction. We must now revert to the more comprehensive problem, which necessitates the treating of losses as a part of the instalment transaction as a whole. Since we are dealing here with losses on the credit transaction, it is deemed fitting to relate losses to the volume of credit extended, or, in other words, to instalment paper. Chart No. 10 gives, for Companies A and C, the losses as percentages of the instalment paper for the same year.[1] The percentages are given in the following table:

TABLE XIII

LOSSES EXPRESSED AS PERCENTAGES OF INSTALMENT PAPER (FOR THE SAME YEAR)

Year	Companies	
	A	C
1916	—	10.6
1917	—	11.3
1918	—	11 4
1919	—	7.2
1920	—	6.0
1921	3.2	8.9
1922	3.4	10 4
1923	3.3	9.1
1924	3.3	9.0
1925	2.6	8 3
1926 (1st half)	—	8.8

[1] The loss figures are obtained by taking the difference between the amount of the unpaid instalments and the amount recovered in the same year.

Comparison of the Companies. A comparison of the two companies shows a decided difference in their loss experience. For the period covered by the data for Company A, the annual losses of this company remained around the low level of 3 per cent; while during the same period (1921–1925), the comparable yearly losses of Company C were from 8.3 per cent to 10.4 per cent.

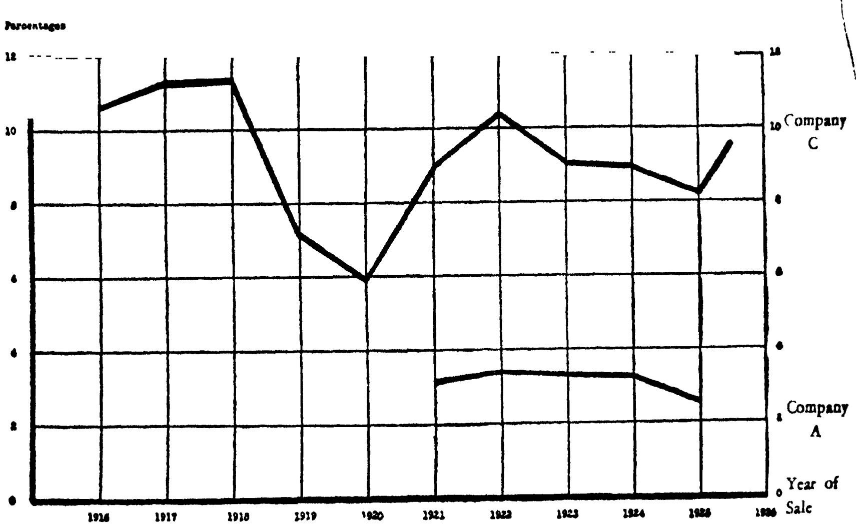

CHART NO. 10. LOSSES EXPRESSED AS PERCENTAGES OF INSTALMENT PAPER (FOR THE SAME YEAR)

An increase in losses and a decrease in the base (instalment paper) account for the rise in the curve from 1916 to 1917. Changes of precisely the opposite nature are to be noticed from 1918 to 1919. The absolute figures indicate that monthly losses based on maturities result in a flattening-out of the curve for the year 1920. The sudden rise in 1921 and 1922 would remain, however, regardless of which base was selected from those commonly employed. A decline from the high level of the depression period gives evidence of an adjustment within the industry. The fall in the curve for 1925 is

of significance only as it shows that there was, for both companies, an increase in instalment paper.

L. CANCELLATIONS AND LOSSES RELATED TO THE AVERAGE BALANCE DUE

(Table XIV, Chart No. 11)

If losses are to be considered strictly for the purpose of showing the situation as regards the credit problem, they should be related either to the volume of credit extended, as was done above when we related losses to instalment paper, or to the average amount outstanding. The former ratio is independent of the time for which the credit runs. For a given volume of credit and for a specified amount of losses, a firm extending credit on a three-year basis would have the same ratio as one whose credit extensions ran for only thirty days. But since the one is counting losses on three years' business, in contrast to the thirty days of the other, their ratios are not comparable from a banking standpoint. The desired picture can be obtained by relating losses to the average amount outstanding. In this case, the magnitude of the bases is affected by the time for which credit is granted, so that the influence of the time element is brought to bear upon the size of the ratio. For this purpose, we have taken cancellations and losses for half-year periods and have related them to outstandings as of the end of the period. The percentages given on the following page, Table XIV, are presented graphically on Chart No. 11.

The subject of total cancellations has already been treated above in the discussions on the amount of repossessions.

The year-to-year movement of the curve showing losses related to outstandings for Companies C and D combined closely resembles that for Company C.[1] In

[1] Charts Nos. 10 and 11.

TABLE XIV

PERCENTAGE OF AVERAGE BALANCE LOST OR CANCELLED DURING PERIOD

(Companies C and D Combined)

Year		Percentage of Average Balance Due Cancelled During the Period	Percentage of Average Balance Due Lost During the Period
1908	1st half.....	7.22	3.18
	2nd half.....	7.27	3.13
1909	1st half......	7.75	3.38
	2nd half......	7.23	3.16
1910	1st half.....	6.93	2.94
	2nd half......	7.81	3.15
1911	1st half.....	7.49	2.88
	2nd half......	7.32	2.72
1912	1st half......	6 87	2.71
	2nd half......	7 66	2.99
1913	1st half......	6.20	2.49
	2nd half......	8.29	3 27
1914	1st half......	6.96	2 88
	2nd half.....	8.09	3.24
1915	1st half......	7 55	2.99
	2nd half....	8.24	3 48
1916	1st half.....	7.96	3.20
	2nd half.....	8 72	3.54
1917	1st half.....	8 74	3.33
	2nd half.....	9.04	3 49
1918	1st half.....	8 22	3 11
	2nd half.....	7 95	3 06
1919	1st half.. .	7 57	2 84
	2nd half.....	6 22	2 29
1920	1st half.. ...	5.04	2 01
	2nd half	5 96	2.58
1921	1st half...	6 98	3 01
	2nd half......	9.76	4.00
1922	1st half......	9.33	3.95
	2nd half.....	10 40	4 59
1923	1st half.... .	9 79	4.01
	2nd half......	8 85	3.49
1924	1st half.....	8 63	3.29
	2nd half......	7 86	3.03
1925	1st half......	7.96	2.97
	2nd half......	8 11	3.08
1926	1st half......	7 81	2.96

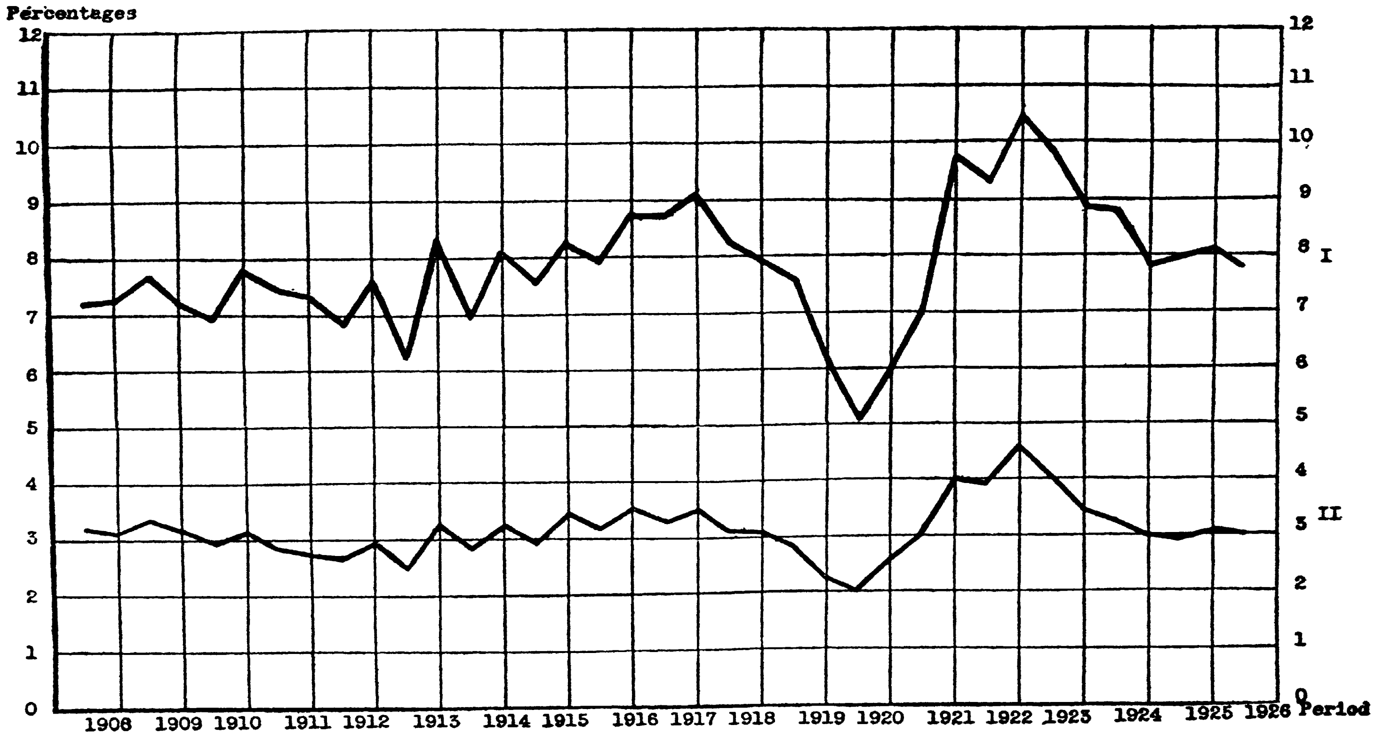

CHART NO. II. EXPERIENCES OF COMPANIES C AND D COMBINED

I. PERCENTAGE OF THE AVERAGE BALANCE DUE WHICH WAS CANCELLED DURING THE PERIOD

II. PERCENTAGE OF THE AVERAGE BALANCE DUE WHICH WAS REPRESENTED BY CANCELLED LOSSES DURING THE PERIOD

each instance, the curves dropped from the level maintained from 1916 to 1918 to troughs in 1919 and 1920, only to rise again during the depression period which followed.

It should be pointed out that the use of outstandings as a base to which to relate cancellations and losses yields lower percentages (in the case of these companies) than if maturities, or even instalment paper, were used. This is true, of course, because in these companies the unpaid balance is invariably larger than either of the other two items. On the other hand, the similarity of the movements of the two ratios which have been studied leads us to believe that a curve showing losses related to maturities, although necessarily maintaining a higher level, would likewise share in the movements common to the curves showing losses related to instalment paper and to the average balance due. Thus, in spite of the absence of data on maturities, we have probably secured a fairly satisfactory picture of the variations in losses.

M. ANALYSIS OF INDIVIDUAL COMPANIES

Having treated each of the items appearing in the instalment transaction, we are now led to remark that there is apparently an inter-relation between the parts of the experiences of each separate concern. This may be discerned from an examination of Table XV, on the following page, where the experiences of each of the concerns is summarized for 1925.

Chart No. 12 and Chart No. 13 present the experiences of two firms which typify opposite extremes as regards the degree of conservatism employed.

An observation of the differences among the companies leads to the conclusion that the various phases of the instalment transaction are inter-related, not only because of the reciprocal influences exerted by them,

TABLE XV

SUMMARY OF FIVE COMPANIES

Company	Total Sales	Instalment Sales	Instalment Paper
A, 1925	84.8% instalment sales	10.4% trade-in allowances 8.9% cash down payments 80.7% instalment paper	6.0% unpaid instalments on repossessions 2.6% losses
B, 1925	61.5% instalment sales	2.1% trade-in allowances 12.9% cash down payments 85.0% instalment paper	.16% unpaid instalments on repossessions
C, 1925	85.9% instalment sales	2.3% trade-in allowances 8.3% cash down payments 89.4% instalment paper	15.9% unpaid instalments on repossessions 8.3% losses
E, 1925	67.9% instalment sales	9.6% trade-in allowances 17.3% cash down payments 73.1% instalment paper	1.8% unpaid instalments on repossessions
F, first half 1926	31.2% instalment sales	4.3% trade-in allowances 25.8% cash down payments 69.9% instalment paper	6.7% unpaid instalments on repossessions

but also because the same policy which produces a given situation in one respect at the same time affects the situation in items independent of the instalment plan. Thus, low cash-down payments and liberal trade-in allowances are not necessarily running mates; but occur simultaneously as expressions of the same non-conservative policy. After all of the items which are directly influenced by the policy of the concern have been modified by this policy, and when the

induced changes have had their repercussions upon other items which are logically dependent upon them, the resulting situation is seen to depend quite largely

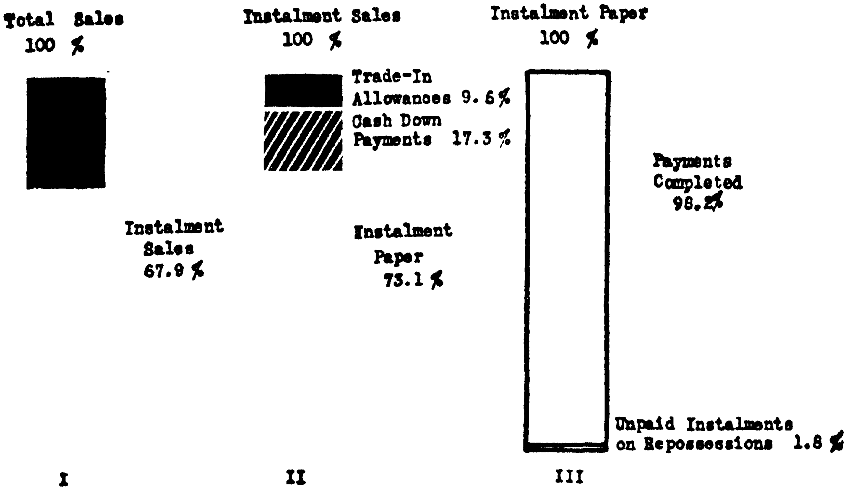

CHART NO. 12. EXPERIENCE OF COMPANY E IN 1925

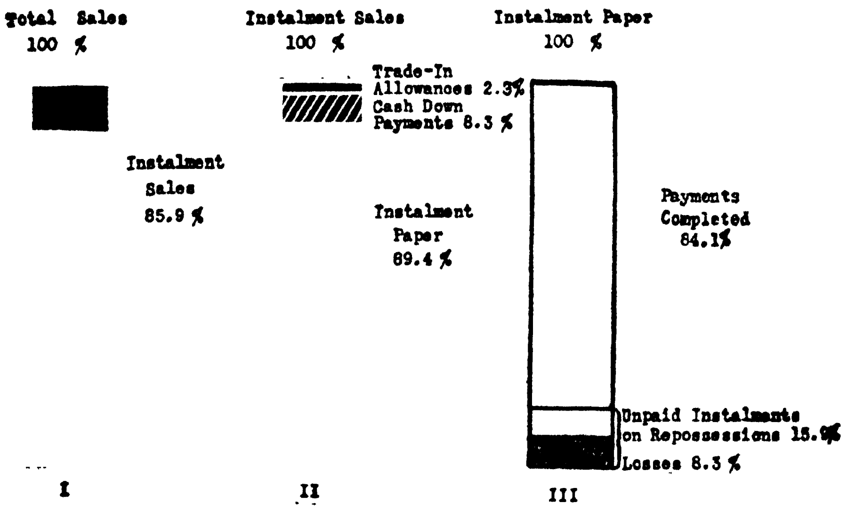

CHART NO. 13. EXPERIENCE OF COMPANY C FOR 1925

upon the policy of the firm. It appears that what may be termed a non-conservative policy expresses itself in a large proportion of credit sales, liberal trade-in

allowances, low cash-down payments, and long terms; and that the logical results of such practices are poor collections, delinquencies, defaults, repossessions, and ultimate losses. As a consequence, the experience of each of the companies stands out as that of a typical firm, pursuing a policy which places it somewhere on a scale that registers the degree of conservatism employed in the granting of credit.

3. Analysis by Periods. Cyclical Fluctuations in the Instalment Piano Business

A. Period prior to 1914
B. Period 1914 to 1915
C. Period 1916 to 1920
D. Period 1921 and 1922
E. Period following 1922

On the basis of a preliminary study of the movements of each of the separate items, we have arranged the years in periods which are more or less distinct as regards the levels and the movements of the curves.

Since no very drastic changes in the piano business are apparent from the beginning of our records to 1914, we have, for the sake of convenience, treated these years as one period. In this instance, as in others, we have taken occasion to characterize years within the period. Next, we have grouped the years 1914 and 1915; the five succeeding years; the years 1921 and 1922; and, finally, the period from 1923 to the last date covered by our data.

A. PERIOD PRIOR TO 1914

In the matter of collection statistics, we have data for Companies C and D combined; Chart No. 5 and Chart No. 6 contain the three curves showing their experience.

As compared with succeeding years, the levels of the efficiency curve (Chart No. 5–1) and of the curve show-

ing the percentage collected on the average balance (Chart No. 5–11) are low. This fact supports the impression gained from an examination of the delinquency curve (Chart No. 6), whose peak in 1908 gives evidence of collection difficulties in this year. That these difficulties gave way to better times in the next year is indicated by a rise in each of the collection curves and by a decided drop in the delinquency curve. Cancellations due to repossessions (Chart No. 11–1) show an increase in the first half of 1909. After leaving a somewhat innocuous 1910 experience, the companies met collection difficulties in the following year which raised the delinquency curve to a minor peak and reduced the collection curves to low levels. The movements of the curves, especially the one showing delinquencies, suggest that there were no serious collection difficulties thereafter until the end of 1913. The curve on Chart No. 7 shows that the number of repossessions diminished steadily until 1913.

B. PERIOD 1914 TO 1915

The apparent similarity of the disturbances arising in the collection experience for 1914 and 1915 illustrates the feasibility of combining several years for treatment as a single period.

The intensity and the extent of the disturbances may be judged by the fact that each of the collection curves descended to the lowest point reached during the nineteen years covered by our data. At the same time, the delinquency curve was rising until it reached its high-water mark in 1915. Even repossessions, which presumably lag behind collection difficulties, had already increased in 1914, and continued at a high rate through 1915 and the succeeding year. In 1915, the loss curve (Chart No. 11–11) begins to show a slight increase.

From these facts, it appears that 1914 and 1915 put

the piano industry to one of the severest tests experienced by it during the time covered by our data.

C. PERIOD 1916 TO 1920

The study of developments from 1916 to 1920 will be facilitated, and at the same time somewhat complicated, by the fact that we have data on several additional items not appearing in the records for the earlier years. The variations in the several items may be summarized as follows:

The curve showing the percentage of the amount of gross sales made on the instalment plan moves steadily downward to a position almost five points below its level of 1916.

Annual increases in cash-down payments raised the proportion from 7.1 per cent to 12.7 per cent of instalment sales.

Trade-in allowances decreased to a level considerably lower than at the beginning of the period.

The proportion of the average instalment sale which reached the stage of instalment paper was considerably smaller at the end of the period than at the beginning.

A phenomenal rise in the efficiency figure culminated in 1920 (first half) in the almost unbelievable height of 99.5 per cent.

A similar movement is demonstrated by the figure showing the percentage collected on the average balance, while the same story is told by the delinquency curve (Chart No. 6), whose downward movement gives evidence of the ease with which collections were being made.

In the case of repossessions and losses, we may logically subdivide the period by treating the years 1919 and 1920 separately. In each of the years 1917 and 1918, there was a rise in the curve involving the number of repossessions (Chart No. 7) and in that

bearing on the amount of repossessions (Chart No. 8 and Chart No. 11–1); but 1919 and 1920 witnessed the rapid decline of these curves to the minimum for the entire period covered by our data. The loss curves (Chart No. 11–11 and Chart No. 10) disclose movements which are practically parallel to those of the repossession curves. Again there are to be seen the significant low points which mark 1919 and 1920 as banner years in the history of instalment selling.

D. PERIOD 1921 AND 1922

Collection records indicate that the period 1921 and 1922 witnessed disturbances similar to those occurring in 1914 and 1915. It will be of special interest, therefore, to learn of the movements of those items not appearing in the records for the 1914–1915 period.

The proportion of total sales made on the instalment plan (Chart No. 1) rose abruptly from its low level for the free-money year of 1919 to a peak in 1920. Resort to half-yearly data reveals the fact that this rise may be ascribed to changes which came in the last half of 1920. The general level varies only slightly for the next two years.

A more lenient policy is reflected in the steady decline of the down-payment curve from 1920 to 1922. The trade-in allowance curve, because of its movement in the opposite direction, affords evidence of the same leniency. That the increase in the latter item does not counter-balance the decrease in cash payments is suggested by an increased proportion of instalment sales represented by instalment paper in 1920, 1921, and 1922.

The curve representing the efficiency figures and the one showing the percentage collected on the average balances (Chart No. 5) reveal the fact that difficulties of a minor nature were affecting collections as early as the last half of 1920. In 1921 and the first half of

1922, however, the two curves mentioned, as well as the delinquency curve (Chart No. 6), give unmistakable evidence of collection difficulties which did not disappear until 1922.

That the factors creating the disturbances in collections were of a serious nature is indicated by the abrupt rises in the curve involving the number of repossessions (Chart No. 7, Companies C and D), and in those relating to the amount of the repossessions (Chart No. 8, Company D, and Chart No. 11–1).

In subjecting the experience of the period to the final acid test, we note that losses (Chart No. 11–11 and Chart No. 10) rose to high levels.

We may accordingly characterize the period as one of trying situations and unsatisfactory developments. As we shall soon discover, however, the dark cloud showed its silver lining during the brighter days of 1923.

E. PERIOD FOLLOWING 1922

In so far as most of the series are concerned, the year 1923 might well be treated separately. But the absence of any drastic changes immediately following this year justifies the grouping of all of the years following the recession period of 1921–1922 into one period. Changes in the magnitude of the various percentages may be briefly noted.

No fluctuations of great amplitude are noticeable in the curves showing the proportion of gross sales made on the instalment plan; but the steady decline in the curves of both Company A and Company C are significant when we consider the fairly constant level which these curves maintain. The violent disturbances apparent in several aspects of the business of Company B would tend to discredit the attempt to ascribe cyclical tendencies to any of the erratic changes taking place.

The experiences of Companies A and C run practically

parallel as regards cash-down payments. The curves show a rise to a peak in 1923 and a decline thereafter. The curve showing trade-in allowances of Company C fell in 1923, rose in 1924, and fell in 1925. In the case of Company B, a downward movement occurred in 1923 and again in 1924. Increases are noticeable for Company A in each of the years following 1922.

In 1923, Companies A and C show declines in the proportion of instalment sales represented by instalment paper. For succeeding years, each of the companies for which we have data was granting an increasing amount of credit on a given amount of instalment sales.

An improvement in collections is suggested by the appearance of a minor peak in the efficiency curve (Chart No. 6–1) for the first half of 1923, and by the trough in the delinquency curve during the same year[1] (Chart No. 6).

The ease with which 1923 collections were made is further demonstrated by the drop in the curves which disclose the repossession experience of Companies C and D (Charts Nos. 7, 8, and 11–1). The lack of uniformity in the movements of the curves since 1923 makes it difficult to appraise the significance of the changes.

The loss curves (Charts Nos. 10 and 11) give evidence of a welcome decline from the high level of 1921 and 1922.[2]

Having gone through a somewhat detailed analysis of

[1] The improvement does not register any change in the curve showing the percentage collected on the unpaid balance (Chart No. 5–11) because the increased sales resulted in an enlargement of the unpaid balance without a corresponding proportional change in the collections.

[2] It is interesting to observe that in the case of Company A and of Companies C and D combined, this decline is due in part to the decreased loss from restocking pianos (Chart No. 9). Whether this decrease reflects less conservatism in restocking, or more conservative practices in exacting payments which leave the unpaid balance on the piano more nearly equal to its resale value, or whether the situation is the result of a combination of the above factors with other conditions, can not be ascertained from the data on hand.

changes in practices regarding the various aspects of the instalment transaction, we may now look back over the developments of the past few years in order to ascertain the relationships which exist among these various practices. What has been the relationship between the changes in magnitude of the various items forming the constituent parts of the instalment transaction?

The broad movements noticeable in almost every curve indicate the presence of factors of a cyclical nature. The cyclical movements in the efficiency curve (Chart No. 5–1), for example, are clearly seen if we follow the year-to-year changes. It is at least possible to detect the general tendency of the curve to maintain a higher level in certain periods than in others. An examination of the other curves discloses similar tendencies.

The observer is also convinced of another fact: the movements, or at least the extreme variations, of the curves, whether they are in the same or in the opposite direction, seem to be consistently simultaneous. It is true that several of the series are interdependent because of their composition, and it is to be expected that their curves would show either positive or negative correlation. For an example of such interdependence, we may cite the case of the down-payment curve and the instalment-paper curve, or that of the delinquency curve and the efficiency curve. To a limited extent, the argument applies also to the repossession curves and the loss curves. There are at hand, however, several series which are *a priori* independent of each other, but whose movements are obviously correlated. This fact suggests that the magnitudes of the various items are influenced either by the same factor or by the simultaneous operation of distinct forces. An instance in point is that of the relationship which apparently

exists between the movements of the efficiency curve and those of the down-payment curve or of the trade-in allowance curve. The presence of this correlation is suggested by the following table in which the percentage for each year is divided by the arithmetic mean of the percentages of the series. This reduction to relatives is necessary in order to make the corresponding items comparable with each other.

TABLE XVI

A COMPARISON OF ITEMS TO SHOW THE SIMILARITY OF THEIR FLUCTUATIONS

Year	Efficiency Figure*	Down Payment	Trade-In
1916	98 8	76 8	94 7
1917	98 8	74 7	100 0
1918	104 5	107 1	73 7
1919	106 3	137 4	73 7
1920	105 9	122 3	63 2
1921	94 7	100 6	100 0
1922	96 3	88 7	136.8
1923	99 6	106 1	126 3
1924	97 5	96 3	115 8
1925	97 4	89 8	115 8

* The yearly efficiency figure was obtained by taking the arithmetic mean of the two half-yearly figures.

A comparison of the yearly figures for the three items yields rather striking results. In nine of the ten years covered, the deviation of the trade-in allowance from its arithmetic mean was in a direction opposite to that found for the efficiency figure. That is to say, the trade-in allowance is above the mean when the efficiency figure is below the mean and *vice versa*. On the other hand, the same method of comparison discloses that, in eight out of ten years, there was a similarity in the deviations of the down payment and of the efficiency figures from their respective means. In other words, it appears that the circumstances resulting in good col-

lections also enabled the dealers to secure a larger down payment, while periods of poor collections witnessed a decrease in the down payment obtained. It is interesting to notice that one of the two exceptional years was the eventful one of 1921, when the efficiency figure fell to the extremely low level of 94.7. There was at the same time a phenomenal drop in the down-payment figure; but the downward movement was timed in such a way that the experience for the entire year registered a figure slightly above the mean. Thus the method of comparing the corresponding deviations from the mean in the various series must be supplemented by a comparison of the year-to-year movements in order to obtain a full appreciation of existing relationships. The same argument applies to the other exception (1923) when, although the upward movement was shared by each, the down-payment figure outdistanced the efficiency figure and reached a level above its mean, whereas the latter halted before it had equalled its mean.

When we attempt to compare the variations in the other items with the variations in those already observed, we find that minor discrepancies as to the precise time or the exact magnitude of the changes (such as were observed for 1921 and 1923 in the comparison of the efficiency series with the down-payment series) render inadequate the method employed there. We must accordingly resort to the alternative of observing the broader movements of the curves. The reaction of the various series to changing economic conditions can best be observed by noting the levels of the curves during such years as 1914, 1919, and 1921, when our series experienced their widest fluctuations. Here we see the results of forces which are possibly more or less in operation at all times, but which appear in exaggerated form during these periods of extraordinary conditions.

By employing such a method, it is possible to gain fairly definite impressions as to the reactions of the various series to given conditions. These conditions take the form of the two extremes commonly spoken of as "good times" or "bad times" for the industry. The most outstanding example of "good times" is to be found during the year 1919. The reaction of the various series to the conditions of this banner year may be summarized as follows:

I. Sales	Total sales increased[1] The ratio of instalment sales to gross sales decreased Cash-down payment increased Trade-in allowance decreased The ratio of instalment paper to instalment sales decreased
II. Collections	The efficiency figure increased The percentage collected on the average balance increased Delinquencies decreased
III. Repossessions and losses	Repossessions decreased The percentage lost by restocking decreased Losses decreased

Thus the year 1919, because of the nature of the experiences of the piano dealer, may be considered a good year for him. He naturally welcomed an increase in the volume of sales; and when this increase was accompanied by growth in the proportion of cash sales, by an increase in the relative amount of cash received as initial payments on credit transactions, and by a decrease in the proportion of the sales price which he accepted in the form of used merchandise, the dealer was reaping a benefit from current business conditions which placed him in an exceptionally strong position. In addition to these desirable developments in connection with

[1] The absolute figures on sales are not given in the text.

new sales, the dealer was also benefiting from an improved collection situation which enabled him to collect promptly a larger proportion of the amounts owed on former sales. Finally, it is apparent that actual repossessions and ultimate losses were at a minimum.

If, on the other hand, we examine the periods of 1914–1915 and 1921–1922, we find movements which are virtually the opposite of those observed for the "good" business period of 1919. This contrast is made more effective if we summarize the reaction of the various series to the conditions of the depression period as we summarized it for the period of prosperity.

I. Sales	Total sales decreased[1]
	The ratio of instalment sales to gross sales increased
	Cash-down payment decreased
	Trade-in allowance increased
	The ratio of instalment paper to instalment sales increased
II. Collections	The efficiency figure decreased
	The percentage collected on the average balance decreased
	Delinquencies increased
III. Repossessions and losses	Repossessions increased
	The percentage lost by restocking increased
	Losses increased.

The movements of each of the series, as well as the characteristics of each period, have already been discussed in detail, so that it is necessary merely to recall the fact that the depression periods witnessed marked changes in the various series relating to the terms of sale and that there were severe collection difficulties.

In the above analysis we have, for purposes of illustration, chosen periods in which fluctuations in the series

[1] Absolute figures on sales are not given in the text.

were of an exceptional nature. An examination of the curves and a review of previous discussions enable us to determine the position of each of the other periods with reference to these two extremes. Employing the vague nomenclature of "good" or "bad" business, and basing our opinions on the data at hand, we may, by way of summarizing previous discussions, characterize each of the periods in accordance with the known experience of the reporting companies.

Our data began with the year 1908, which was apparently a year of strenuous activity. Improvements followed until a minor recession occurred in 1911. A partial recovery was succeeded by a decline culminating in 1914–1915 in what may be considered as the most severe depression during the years covered by our data.

For four or five years following the recovery from the depression of 1914, the experience of dealers in the instalment piano business was highly satisfactory. The success of this period came to a climax and was followed by two years (1921 and 1922) in which the situation was anything but pleasing.

In 1923, a recovery which assumed, in lesser degree, the characteristics of former "boom" years placed the industry in a favorable position. The somewhat even tenor of the years since 1923 may be considered as the resultant of two opposing forces. On the one hand, fairly prosperous business conditions have aided in producing a desirable business situation. On the other hand, competition, especially from other products sold on the instalment plan, has been instrumental, according to the opinion of piano dealers, in forcing them to take steps which tend to weaken their position.

In thus characterizing these various periods, we have virtually described, in a broad way, the cyclical fluctuations in the instalment piano business. While we have been interested in the cyclical factors as related ex-

clusively to this industry, it is worthy of remark that the ups and downs in this instance appear to correspond in broad outline to the generally recognized periods of prosperity and of depression in general business conditions.

4. Summary and Conclusions

In concluding this account of instalment selling in the piano industry, we may summarize our conclusions briefly as follows:

An attempt was first made to study each of the several items bearing upon the instalment transaction with the aim of detecting the variations which arose as a result of differences among companies or of fluctuations in business conditions from year to year. In the case of most of the items, a comparison, either of companies or of the experiences of the same company for different years, disclosed wide discrepancies in the practices. These differences would by themselves render difficult the task of selecting a set of practices which might be considered typical. We may, however, suggest the limits within which each of the items varied.

As regards the proportion of sales made on the instalment plan, two of the companies for which we have annual data have their percentages fluctuating in the neighborhood of 60, and the other two around 80.

Trade-in allowances range from 2 per cent to a maximum of about 10 per cent. Compared with the automobile industry, the practice of granting allowances on used goods is relatively unimportant.

Policies with respect to the cash-down payment vary from the strict requirements resulting in an average initial payment of one-fourth of the selling price to those permitting a purchaser to obtain an instrument on which he has paid less than one-tenth of its market value.

After trade-in allowances and cash-down payments have been subtracted, there remains from 70 to 90 per cent of the instalment sales to be accounted for by instalment paper. This paper apparently runs for periods which average from 14 to 30 months. As a result, there is an average unpaid balance of from less than two-thirds to more than one and one-half times the annual volume of instalment paper.

The combined experience of two firms shows that approximately 30 per cent of their average outstandings is collected each half year. This indicates an annual turn-over of receivables of 0.6.

As a standard of collections, the "efficiency curve" (for two companies) gives an account of variations in collections. The delinquency curve supplements this information and at the same time adds to our knowledge of the magnitude of the delinquencies. The notes which are more than 30 days past due usually comprise less than 10 per cent of the total amount outstanding for the same date.

Wide differences are to be found in the percentages of instalment-sold pianos which are repossessed. The experiences of the several companies range from that of the firm which repossesses only a fraction of 1 per cent to that of another which finds it necessary to repossess from one-fifth to one-fourth of all pianos sold on time.

As compiled for two companies, the data show that, as a result of the repossession transaction, from one-third to one-half of the unpaid instalments on repossessed pianos are written off as a loss when the piano is restocked. This may be illustrated by the experience of one company in 1923, when the average of the unpaid instalment on repossessed pianos was $422, of which $170 was lost. Aggregate losses, if distributed over all pianos sold on time, would have amounted to $34 for each piano sold on this basis.

In viewing instalment selling as a credit transaction, we related losses to the amount of credit extended (instalment paper), and by so doing secured figures which show that while the losses of one company are kept around 3 per cent, those of another have occasionally gone above 11 per cent.

Losses related to the average balance due afford a picture which is of interest exclusively to those who view the instalment scheme from a banking point of view. Here we have losses related to a dollar-year base. On such a base, the annual losses for the two companies covered by our data approximate 6 per cent.

The real significance of the variations in each of the several items comprising the instalment transaction is evident only when we view the situation as a whole with the purpose of determining the relations between these items. This was done by characterizing the practices of each of the companies and by observing how these practices changed from time to time.

Such a bird's-eye view of the situation yields a rather definite impression that not only are the magnitudes of some of the items dependent upon the policies respecting the others, but also that a given policy in regard to some of the steps in the instalment transaction is customarily accompanied by definite policies concerning each of the other logically independent steps. To illustrate, not only does it appear that there is a connection between long periods and the losses which follow in their wake, but it also appears that the company which extends credit for a long time accepts a relatively small down payment, makes a liberal trade-in allowance, sells a large proportion on time; or in short, pursues those practices which are usually thought of as non-conservative. As a result, a company may be characterized according to whether it possesses the

features of the more conservative or those of the more venturesome companies.

The interdependence of the several items is even more evident when we compare the fluctuations of the various items for the same company as good times succeed bad. In the cases studied, there appeared simultaneous cyclical fluctuations in each of the series. These fluctuations correspond, in a rough way, with the variations in general business conditions. The experience covered by our data indicates that certain periods have been characterized by increased sales with the proportion of cash sales and the cash-down payment at a maximum, by good collections and by low repossessions and losses. In every way, developments have been favorable to the dealer. Then there is the other extreme, in which circumstances are in every respect unfavorable. Sales fall off in spite of concessions in the form of lower cash-down payment requirements, larger allowances on trade-ins, and, perhaps, longer terms. Moreover, the position of the dealer is jeopardized, not only with respect to present sales, but also because collection difficulties, repossessions, and ultimate losses are interfering with the satisfactory completion of transactions which were begun in an earlier period.

Having thus established the existence of an interdependence among the various parts of the instalment transaction as regards both variations in time and differences among companies for the same period, we may now proceed to speak of a set of interdependent practices as a composite measure of the policy of the firm. A consideration of our data in this light leads us to conclude that if, with the passage of time, competitive forces have succeeded in standardizing practices in the piano industry to a greater extent than in some of the newer industries, the result has apparently been the establishment of a number of standard policies rather

than the reduction of various practices to a single type. This suggests that even if there were data covering the entire industry, it would be possible to make only a few generalizations, such as those pertaining to the large proportion of time sales or to the insignificant rôle played by the trade-ins, which could be considered as applicable to the industry as a whole. Accordingly, while a more comprehensive study might add an abundance of illustrations of the points raised in this study, as well as permit a more refined treatment of the data, the difference between the results to be obtained from such an enlarged study and those secured from the present one would be a difference in degree rather than in kind. It would still be necessary to treat individual firms rather than the industry as a whole.

If we revert to the larger problem of instalment selling *per se*, we may remark that the study of this form of merchandising in the piano industry has served the incidental purpose of showing that it is impossible to pass judgment upon all instalment selling, because in doing so we should ignore important differences in policies and experiences. We must rather condone or condemn, not the whole of instalment selling, but only its individual manifestations as they appear in the experience of the single business unit.

Part Two

THE BOOK TRADE

1. The Early History

This report does not aim to be a history of the book trade, nor yet, unfortunately, can it pretend to be a detailed study of that branch in which we are particularly interested. Details on the present status of the instalment book business are difficult to obtain, and those that are forthcoming will have to appear elsewhere. All that we are attempting here is to give some account of bookselling methods which have prevailed in the past and which have a particular bearing on the modern instalment trade, together with some general facts pertaining to the instalment plan of bookselling as we know it now.

Instalment selling perhaps has a longer history in the book trade than in any other. The reasons for this are very complicated, but among them is the fact that from the inception of modern book-making it has not been marked by the major revolutions for which scientific progress has been responsible in other fields. There have been changes in methods both of production and of distribution in this field as well as in others; but from the final discarding of the hand press, and the commencement of purely mechanical printing, the changes have been changes of degree and not of kind.

The printed book, like the moving-picture theatre of more modern times, has from the beginning had many enemies who felt that only ill could come from the acquisition of books by the vulgar and from the

consequent dissemination of knowledge. There were many sympathizers of the fifteenth-century French rhymester who feared the ill effects of these new printed books, which he said would

> ". . . draw to studious ways
> The poor men of our days
>
> Our streets will swarm with scholars
> Without clean shirts or collars."

This fear was of course not confined to the fifteenth century. That the book trade is as old as history is a commonplace which need not be developed here. Modern book distribution may be said to have begun at about the middle of the eighteenth century. Two agencies of distribution are of importance here—the circulating library, and the "number trade"—the first because it is responsible for a great and sudden increase in the demand for books, the second because it is the direct parent of the instalment method prevalent today; and both because they increase materially the circulation of books in areas which could not otherwise be reached. This last is an argument alike of the circulating-library keeper, the "number" publisher, and the instalment dealer, and it is undoubtedly true that these methods have been responsible for the distribution and publication of a very great number of books, if not for a proportional increase in reading.

It must be borne in mind that the group of people whom we ordinarily mean when we speak of publishers is of comparatively recent origin. For the most part, these men, whose activities include the purchase of copyrights, the employment of printers, and the sale of books at wholesale, are of an entirely different order from the old-time booksellers who themselves constructed all the machinery for printing, bound the books

and sold them directly to the public. This distinction between publisher and bookseller holds rigidly today in the ordinary fields of book-making and distribution; and it is only the instalment-plan publisher now, as formerly the "number" publisher, and, to some extent, the "circulating-library" publisher, who retains the function of bookseller.

The circulating library is an institution with which we are all familiar. It is, however, not generally known to what extent this innovation was responsible for the great impetus to publishing, in the latter eighteenth and early nineteenth century. The first circulating library in London was established in 1740, by one Samuel Bathoe, a bookseller, who had his quarters on the Strand.[1] It took some time for his idea to be adopted, but he was soon imitated by his fellow booksellers, and the practice grew rapidly. These circulating-library keepers took subscriptions to their libraries at fifteen shillings or a guinea a year, and permitted readers to exchange their books as often as they liked. This considerably altered the situation which existed when a reader was compelled to pay anywhere from four to sixteen shillings a volume for a novel.

We can not wholly lay at the door of a heaven-sent desire for culture the responsibility for the tremendous increase of reading in the last hundred and fifty years, any more than we can hold the ebullition of genius, so called, responsible for the amount of writing done. The production and the consumption of books are quite as susceptible to the influence of economic demands and to methods of distribution as are the production and consumption of any other consumers' goods. The fact that two million dollars' worth of Nelson Doubleday's *Etiquette* was sold during 1922–23 in no sense implies a sudden urge to social refinement. Mr. Doubleday merely

[1] Limbs, *Curiosities of London;* A. Besant, *London in the Eighteenth Century*, etc.

created the need for his particular etiquette book, and when the enthusiasm died down, and he found that he had reached the point at which it cost as much actually to make and to sell a volume as he received for it, the output ceased.

In exactly the same way was fostered the interest in reading created by the circulating library. The wide-spread effect of this innovation can readily be seen when we consider that although at the middle of the eighteenth century the word "novel" was almost unknown —was not, at least, a term in common use—in the last thirty years of the century over fifteen hundred novels alone were published. Contemporary comment ascribes this increase almost wholly to the increase in the number of circulating libraries. The London circulating library had been established in 1740. In 1770 there were four such libraries in London, and by 1800 there were over twenty in existence,[1] not to mention those that had lived and died in the interval. The same argument offered by the keeper of the circulating library in defense of his method is, in effect, used today by the publisher who sells books on the instalment plan. When a man buys a seventy-five-dollar set of books under this system, so we are told, he is making, not a seventy-five-dollar investment, but rather an investment of five dollars a month. He would never have purchased the books were it necessary for him to pay the seventy-five dollars at once. In this way, the publishers think, books are placed in the hands of hundreds of people who could not otherwise have them. That the eighteenth-century circulating-library keeper was also, in most cases, a publisher, is, moreover, perhaps to the point. The laudable desire to oblige the public possibly finds an added stimulus in the increased publication which results. It is certainly true that just as some of the

[1] *Annual Register; City Press.*

largest firms today have been built up on the publication of books for instalment sale, so were some of the most prolific publishers of the latter eighteenth century those whose output consisted largely of "circulating-library novels," as they were commonly called, and of those curious and endless volumes of "voyages and travels," some real and some fictional, for which our more sophisticated tastes have substituted Ridpath's *History of the World* and the *Book of Knowledge*. William Lane, owner of the "Minerva Press," made a specialty of publishing the wares demanded by circulating libraries; and despite the apparently endless stream of widows, boarding-school ladies, and actresses with lost reputations, who turned to novel-writing at this time, discovered that the demand created by this new method of distribution exceeded the supply. One finds quaint advertisements in the backs of novels published during the 1780's asking for more manuscripts, offering advice to persons desiring to start circulating libraries, and adding that there are on hand several thousand volumes "suitable for circulating-library purposes." Just as the circulating library was responsible for the prodigious increase in the numbers of books published and sold in the latter part of the eighteenth century, so the instalment system is responsible for the fact that over seventy-five thousand sets of the *Harvard Classics* have been published and sold, and that Joseph Conrad has found his way to the bookshelves of persons of the most diverse tastes, and that sets of O. Henry which Doubleday, Page and Company put on the market in 1911 are still selling at comparatively high speed.

It may not be amiss here to present briefly a few facts regarding the old "subscription" method of publication—a method which has persisted throughout all the various changes in bookselling, and which is in existence at the present moment, both here and in England.

The first important book publisher was probably Jacob Tonson, who lived in the latter seventeenth and early eighteenth century, and who is famous as the publisher of the works of John Dryden, and as founder of the house which published Pope and Johnson. He it was who first published dramatic works as a money-making enterprise for both publisher and author. Previously, only the actual production of plays had created any income for the dramatist. Shakespeare and all those who followed him did not make a shilling out of the printed versions of their plays. For all his daring, it took much courage for Jacob Tonson to resolve on this innovation; and even then he used the only perfectly safe method of distribution known at that time, and he had his edition put out by subscription. This method (by which the sale of a minimum number of copies is assured) was the one most frequently employed in the early days of the business, and the one by which many of the best-known works of the highly productive eighteenth century were placed before the public.[1]

Some notion of the amount involved in such a transaction can be gathered from the facts available concerning Tonson's arrangement with Dryden for a translation of the classics, an arrangement by which there were two sets of subscribers. The first group, of whom there were one hundred and one, were to pay five guineas per copy and to have the "dedication of a plate with their arms engraved underneath"; the second group, numbering two hundred and fifty, paid two guineas each. This arrangement, together with the hundred and fifty pounds paid to the author by the publisher, netted the former in all approximately thirteen hundred pounds, a very generous amount in those days. The publisher,

[1] See Frank Mumby, *The Romance of Bookselling;* Knight, *Shadows of the Old Booksellers;* Curwen, *History of Bookselling,* for accounts of Tonson.

too, profited by the transaction, and, at the poet's death, had amassed a considerable estate out of his share of the proceeds.

Another interesting financial arrangement was that between Pope and his publisher for the translation of Homer. The translation was to consist of six volumes delivered to subscribers, each volume as it was completed, for a guinea apiece. This method of "instalment" publication and selling has, with many variations, continued from that time until the present. Besides those sold by subscription (all the receipts for which, plus twelve hundred pounds paid him by the publisher, went to the author) the books were also published and sold through the ordinary channels, all the profits of which latter type of sale went to the publisher. Out of his share of the transaction, the author realized £5,320.

The chief argument of the instalment bookseller of today—that he can put into the hands of the public books which would otherwise be unavailable—was probably first used by John Bell, a publisher and bookseller of the last years of the eighteenth century and the first of the nineteenth. He, together with one or two followers, invented what is called the "number trade," by which expensive books, formerly available only to the few, were sold in "small weekly portions to those to whom literature had hitherto been an unknown luxury." This we take to be the true beginnings of the instalment book business. A similarity will be noted, not only between this plan and the modern instalment method of trade, but also (taking into account the obvious change of taste with the lapse of time), between the types of books sold by this "instalment" plan and the one now in use. A glance at magazine advertisements shows us that the large instalment houses are selling *Histories of the World*, *Books of Knowl-*

edge, *Lives of Great Men*, and the *Collected Works* of popular authors; while a cursory look at the books sold by the ancestors of the "trade" shows us the *Lives of Christ*, *Histories of England*, Foxe's *Book of Martyrs*, Family Bibles with notes, and the *Works* of Flavius Josephus.

The number method was used most extensively by one Thomas Kelly,[1] who, after having served the customary apprenticeship, started in business for himself in 1809. A brief investigation of the nature of the "number trade," as he practised it, will show it to be the direct forerunner of the instalment method. Like the latter (especially in its earlier years), the "number trade" was carried on wholly by house-to-house canvassing, and was probably the first bookselling practice to make use of this device. In this way a clientele was reached, quite out of the range of the regular booksellers, although the latter eventually profit considerably by the method.

Kelly's experience will perhaps best illustrate the nature of the "number trade." His first trial was with Buchan's *Domestic Medicine*, of which he bought a thousand copies in sheets. He prefixed a brief account of the author and, dividing the book into numbers or parts, went in search of subscribers. The "New Week's Preparation" he disposed of in the same manner. The success of these two enterprises encouraged him to publish on his own account, and he always made use of this sectional method in the sale of his publications. He operated through his own agents, giving them on credit stock worth from twenty to a hundred pounds for disposal. One of the first books published specifically for this type of sale was Kelly's Family *Bible*, of which one still occasionally hears. This Bible extended

[1] Part of the information concerning Kelly (enough to verify the extent of his activities) and all the actual figures come from the histories of bookselling, particularly *Curwen's*. The rest of the information was gathered from advertisements in announcements in the backs of books of his period.

to one hundred and seventy-three numbers, and the entire work cost subscribers £5 15*s*., paid, of course, in very small weekly or monthly instalments. About 80,000 copies were sold, and very quickly, bringing the gross income from this enterprise up to approximately £460,000, about half of which went into the cost of distribution, agents' commissions, etc. In the same way Kelly published and sold many other lengthy works, among them the popular *The Pilgrim's Progress*. How extensive his activities were may be gathered from the fact that from one agent alone he often received from £4,000 to £5,000 a year.

The following figures, too, will give some notion of his sales: *History of the French Revolution*, 20,000 copies at £4; Hume's *History of England*, 5,000 copies at £4 18*s*.; *The Gazeteer*, 4,000 copies at £4 10*s*.; *The Oxford Encyclopedia*, 4,000 copies at £6; *The Geography*, 30,000 copies at £4 4*s*.; *Architectural Works*, 50,000 copies, at an average of £1 13*s*. To these may be added the *Life of Christ*, of which not less than 100,000 copies were distributed, varying in price from £1 1*s*., to £2.

Another publisher who made a fortune, and extended considerably the number trade, was George Virtue, who was engaged in this type of publication from 1821 until his death in 1868. Some of his successes were tremendous, and the size of his editions certainly far surpassed anything distributed through ordinary channels. But, although his career is a very interesting one, it is in effect but a repetition of Thomas Kelly's, and need not, therefore, be detailed here. It must be remembered that these books, although published in England, were distributed in America as well, and in many cases (notably that of the *Encyclopedia Britannica*, which will be discussed later) fared even better here than at home. "In America," says a biographer of Virtue, quaintly, "the *Guide to Family Devotion* (one of

Virtue's Books) was as successful as at home, and upwards of one hundred ministers there sent in testimonials to its worth."

This forerunner of the instalment trade, as will be noted, carries us well past the middle of the last century, and approximately to the time when the modern instalment trade was conceived. There was, throughout the latter half of the century, a great number of projects launched to satisfy the demand for wider distribution of books—as well as to create that demand—but these projects can not be further explained here.

2. THE MODERN INSTALMENT TRADE

The instalment book trade, as we know it now, has a history going back, as the evidence seems to indicate (evidence which, unfortunately, can not be exactly verified), to the 1860's or thereabout. It has been impossible to ascertain who started, and when, this method of sale. The absence of actual figures covering a long period of time also makes it difficult to be certain of the progress of the instalment trade as compared with the regular book trade. Publishers now seem to agree, however, that its highest point of activity might be dated at about twenty years ago.[1] At that period there were numerous fugitive publishing companies, created for just this purpose—companies which came into existence and disappeared within the space of a few years. It was the golden age of the house-to-house book agent. Most of the established publishing firms, moreover, added this to their regular sales departments, and it was only gradually that the ephemera disappeared, leaving the business the more or less stabilized occupation it is now.

Instalment bookselling has, since the opening years of the present century, been gradually centralizing

[1] Especially Harper's and Doubleday's.

itself. Harper and Brothers, who once did an extensive instalment business, dropped that branch of its trade some six or seven years ago, selling out to P. F. Collier & Sons, now the largest instalment house in the book-publishing business. Charles Scribner's Sons formerly emphasized this aspect of their business strongly, and were the originators of the plan of sending, with the set of books sold, a subscription to their magazine, for the purpose, we were told, of keeping the buyer always in receipt of "something new" in order that he might not become negatively inclined to his purchase while the need of paying for it still continued. This plan they have ceased to follow since it has been adopted by other publishing firms and since, because of its later developments, their purpose might be misunderstood. One large magazine publishing house, at least, has built up its circulation (and consequently its advertising business) largely through sending a subscription to the magazine with each set of books sold on the instalment plan. This, together with the "club" sale of magazine subscriptions, is a device frequently employed for increasing circulation.

Probably the two most important single promoters of the instalment book business in America, at the time when the business was becoming a popular one, were William Hooper and Walter Jackson, who for many years published and conducted the selling campaigns for the *Encyclopedia Britannica*. Mr. Hooper was probably the great initiating force of the partnership, and is doubtless to some extent personally responsible for the gradual disappearance of some of the "wild-cat" instalment organizations by his popularization of the instalment purchase of a superior class of books. It is said that he first conceived the notion of time-payment purchase when he was employed by a Chicago publisher who had in stock a large remainder of a standard

reference work. Mr. Hooper persuaded the firm to offer the books in their Christmas advertising on easy terms. The result, which was more satisfactory than he had dared to hope, established his faith in the system.

Before going into an account of Hooper and Jackson's experience with the *Encyclopedia Britannica*, it might be of interest to trace briefly the facts regarding the earlier career of the *Britannica* and its predecessor, *Chambers' Encyclopedia*. This story more or less exemplifies the growth of the instalment business out of the "number trade."

By 1746,[1] the encyclopedia originally compiled by Alexander Chambers had reached a fifth edition. A new edition was in contemplation for many years, and finally one Dr. Calder was given a commission to draw up a prospectus for a new issue. His plans were generally criticized for one reason or another, among them being the fact that the author had referred favorably to the "*Encyclopedia Britannica*—a Scots rival publication in little esteem." The new edition was finally edited by Abraham Rees, and issued (in the then customary manner) in weekly parts, beginning in 1778 and running for eight years, attaining a circulation of four or five thousand for each issue. For the first twenty years of the nineteenth century, this encyclopedia occupied the place now held by the *Britannica*, and it was only after that period that its "little esteemed" rival superseded it.

The publication of the first edition of the *Encyclopedia Britannica* began in 1771, and the work was issued in weekly numbers until 1773. William Smellie, a young compositor, was paid for writing up the "sub-divisions and detached parts" of the "fifteen capital sciences" and preparing the work for the press. The second edition extended the original three volumes to ten, and

[1] Curwen.

sold 1,500 copies; the third, which appeared in 1797, in 18 volumes, sold 10,000 copies, and netted a profit of £42,000; the fourth edition, completed in 1810, and comprising 20 volumes, sold 3,500 copies; a supplement of six volumes was then added, appearing between 1815 and 1824. The seventh edition, distributed in monthly parts beginning in 1830, was completed in 1842, and was the first phenomenally successful edition. After the issue of this set of twenty-one quarto volumes, no other encyclopedia could compete with the *Britannica*, and the efforts of Hooper and Jackson, by applying to the sale of the later editions a newly popular method, served to maintain its position and to strengthen it.

The *Britannica*, sold, as has been seen, in "numbers" in its earlier days, is now, and has been since the days of Hooper and Jackson, sold almost wholly on the instalment plan. Unfortunately, we have been unable to obtain adequate figures as to the extent of the latest edition of the encyclopedia; but it is certain that only a very small percentage of the sets of that edition were sold for cash. Just before the opening of the century, Mr. Jackson and Mr. Hooper (the latter then of *The London Times*) bought the trade name of the *Encyclopedia Britannica* from A. and C. Black, who had owned it from its earliest days. The encyclopedia was then in its ninth edition. They planned a tremendous advertising and selling campaign in connection with *The London Times*, which, then under the editorship of Moberly Bell, was desperately in need of circulation. By the arrangement, an issue of the ninth edition of the *Encyclopedia* (then twenty years old) was put out under the title, *The London Times Edition*, and was sold on instalments at 40 per cent of the original price, or £14; and a subsidy was paid the *Times* for the use of its name. Through this campaign, which was begun in March,

1898, 10,000 sets were sold in one year in Great Britain, and a total of 33,000 sets throughout the empire.

A year later, the tenth edition was announced, which was to have eleven supplementary volumes. Hooper and Jackson claimed that they sold in the United States ten times as many as in Great Britain. *The Times* had full editorial responsibility, and Hooper and Jackson paid all the expenses of the edition. *The Times*, certainly a conservative organization, became so wholly converted to the notion of instalment selling, as a result of watching Hooper and Jackson, that, between the publication of the ninth and the tenth editions of the encyclopedia, they issued on this plan a *Times* edition of *Punch*, and an issue of the *Century Dictionary*.

In 1902–3, the selling campaign for the tenth edition was opened. "The price of the twenty-four volumes of the old ninth edition and the ten supplemental volumes and new index," says an account of this enterprise, "was twenty-eight pounds, payable in instalments. Various methods were used to get lists of people who might be interested, and from then on until December 18, the date of the price increase, the mails of the British Isles were full of letters and leaflets. 'The whole country from Land's End to John O'Groats, and from Yarmouth to Dammore Head, was pervaded by the *Encyclopedia Britannica*. There was no escape from the torrent of "follow-ups" save by dispatch of an order to purchase accompanied by one guinea'. . . . The sales in the United Kingdom reached $3,000,000, and in the United States were immensely greater."

It has been said above that the highest point of activity of the instalment business in the selling of books came approximately twenty years ago, and that since that period the business has been more or less centralized, so that the greatest portion of the instalment business in America is now in the hands of two

or three concerns, with P. F. Collier & Sons heading the list. This does not indicate that the sale of books on the instalment plan is a "dying fad"; on the contrary there has been established a certain field of trade, concerned with a special type of book which seems to lend itself to this method of sale rather than to any other. Of these the *Encyclopedia Britannica*, and such collections as the *Harvard Classics*, and Ridpath's *History of the World*, are excellent examples. The demand for the sets of "Works" by various authors will probably continue to fluctuate, and will probably depend largely on the campaigns of their publishers. It is difficult to reach any definite conclusion concerning the progress of instalment selling in books, without a very large body of figures, because so much does depend on this matter of isolated campaigns. The Nelson Doubleday campaign for the sale of O. Henry and the Harper campaign for Mark Twain both considerably augmented the total of instalment sales for their respective years. According to the estimate of several publishers (not, we fear, based on any very accurate statistics), the aggregate of instalment sales has not materially lessened —has perhaps increased—but it has not kept pace with the rest of the book trade. The reasons for this are numerous. Several publishers have stated that the greatly increased popularity of the phonograph and the radio (both of which can, of course, be bought on instalment) have interfered with the instalment sale of books, in recent years. Another reason which was suggested by one publisher, and agreed to by two or three others, is that sets of books are no longer in demand as "furniture" to the extent that they formerly were. People are moving into smaller quarters, and do not have the wall space for book-shelves in their apartments that they had in their larger houses. This use of instalment sets has apparently been accepted by

publishers as a legitimate one, and was extensive enough to make the change due to these conditions a noticeable one. It was suggested above that these innovations for "large-scale" distribution increased the number of books sold, if not the amount of reading done, a condition which is not peculiar to this century. The poet Southey, complaining of the cost of books, says (using exactly the term employed by contemporary publishers when talking of this matter), that "they are becoming fashionable furniture more than anything else. They who do buy them," he adds, "do not read, and they who read them do not buy them. I have seen a Wiltshire clothier who gives his bookseller no other instructions than the dimensions of his shelves; and have heard of a Liverpool merchant who is fitting up a library and has told his bibliophile to send him Shakespeare, Milton, and Pope, and if any of those fellows should publish anything new to let him have it immediately." How many home builders have allowed themselves just room for the "five-foot shelf," and how many sets of that work have been sold just because the buyer knew ahead of time exactly how much space it would cover, is, of course, only to be conjectured. Be that as it may, Mr. Parmentier of Harper's states that time and again, when they have repossessed books because of non-payment, examination of them shows that they have never once, perhaps, been opened. To what extent the kitchenette-apartment will do away with the "sets of books," along with the family "what not" and other antiquated articles of furniture, remains to be seen. The publishers have, however, apparently noticed the effect already.

Some idea of the amount involved in placing on the market sets of books to be sold on instalment may be gathered from the advertising figures in a report entitled *National Markets and National Advertising*, based on

figures compiled by Mr. J. W. Hayes of the Crowell Publishing Company. These figures show the amounts spent by concerns in various fields on advertising during the past ten years. An inspection of the figures of the principal book concerns doing an instalment business shows a steady increase in the amount of advertising from 1915 to 1924 inclusive on the part of the most important of these. Following are the figures given on the houses now doing the largest instalment business.

SUMMARY SHOWING INCREASE IN AMOUNT OF ADVERTISING PLACED BY PRINCIPAL BOOK CONCERNS ENGAGED IN SELLING BOOKS ON THE INSTALMENT PLAN

	1924	1923	1922	1921	1920
Doubleday (by mail)	102,143	195,330	153,350	126,218	4,634
Encyclopedia Britannica	75,575	27,540	——	——	——
Review of Reviews	14,050	21,675	8,730	24,083	34,393
P. F. Collier	55,230	81,738	115,828	76,945	78,497
Scribner's	12,356	11,696	9,236	9,045	32,638
Total advertising	2,944,158	2,924,787	2,689,133	3,030,758	2,960,424

	1919	1918	1917	1916	1915
Doubleday (by mail)	——	5,182	15,391	6,958	——
Encyclopedia Britannica	——	——	——	——	——
Review of Reviews	69,188	41,830	64,490	60,828	16,357
P. F. Collier	20,409	——	42,331	54,005	14,826
Scribner's	37,027	18,564	26,631	19,122	——
Total advertising	——	——	——	——	——

An inspection of the advertisements in the magazines canvassed by Mr. Hayes shows over 75 per cent of the

advertising of Nelson Doubleday and Collier's to have been for sets sold on instalment, although the item most widely advertised by the former during 1923 was the *Book of Etiquette*, which was sold, not on instalment, but for a single payment. The largest single item advertised by Collier, who is second on the list in amount of advertising, is the *Harvard Classics*. These same magazines show a steady decrease, over the same period, of advertisements by smaller concerns.

It will be noticed that the largest totals for these more important instalment houses come in 1922 and 1923, but that the total amount of advertisements from 1920 to 1924 (the only data given) remains almost constant. It should be remembered that this total includes *all* book advertisements, of all the principal concerns, and not merely those of books to be sold on instalments by the concerns mentioned above.

There are two principal selling methods now employed by book concerns in the instalment trade—that of house-to-house canvassing, and that of direct-mail selling. The former, as we know, was until comparatively recent years the one most widely used; but it is gradually giving way to the latter. Nelson Doubleday, who does an instalment business of over one and a half million dollars a year, employs both means, but is specializing more and more in the direct publisher-to-consumer sale, a method which he now employs far more extensively than the other. (Notice should be taken of the fact that, according to Mr. Hayes' figures, Doubleday's advertising far exceeds Collier's, although the latter's instalment business is nearly three times as extensive as the former's. This is probably due to the fact that, emphasizing direct-mail sale, Doubleday's must depend almost wholly on magazine advertising, to take the place of the personal advertising of agents.)

The problem of repossession is closely bound up with this question of the method of sale. In the case of house-to-house canvassing, Doubleday's, which is probably a fair example, does not have its own agents, but sells to itinerant booksellers, who are then responsible for the subscriber's payment of instalments as they become due. The agent, and not the publisher, loses in consequence of the subscriber's failure to pay. It is necessary for the publisher, under this method, to concern himself with the credit rating only of the agent, and not of the subscriber. Under the direct-mail method of sale, loss by failure of the subscriber to pay must be borne by the publisher, there being no intermediary factor.

All publishers agreed in finding it impossible to make any accurate investigation of the credit status of their subscribers, except in the case of the most expensive sets of books. One publisher states that he relies very largely on the type and quality of the stationery used by his clients, and other similar external evidence; another asserts that it is almost wholly a matter of chance, but that in the case of sets of books selling for $20 or $30 the cost of any kind of satisfactory investigation—approximately $25—would be, on the face of it, prohibitive. Some books—those of a more scholarly nature, or technical works—by their very nature command only a responsible clientele.

With the admission that it is almost impossible to establish the credit of most of the purchasers goes the statement, to which practically all the publishers that have been interviewed subscribe, that the percentage of repossessions is very small. For the most part, under the present system, when a large portion of instalment selling is carried on through the mails, the actual distance between buyer and seller makes repossession

almost impossible. In addition, the value of books depreciates very rapidly, and the cost of repossession, plus the cost of depreciation, would make the total loss, proportionally, very high. On the whole, very little effort is made by publishers of any but the most expensive sets to regain possession of unpaid-for books. On the other hand, we are told by several publishers that the percentage of loss is comparatively small and also that the rate of payment differs very little in times of depression and in times of prosperity. The reasons for this are not all clear; but one publisher suggests that the individual payments are ordinarily so much smaller than those of most instalment-sold articles that they are more easily met.

As one may readily imagine, instalment selling encountered, as the old-established publishing firms commenced to enter the field, much opposition from regular book-dealers. Harper's announced decision to sell a set of Mark Twain on instalment raised a loud protest from booksellers to whom that author had always been a source of generous income. It was soon found, in this instance, however, that the issue of the set stimulated, rather than reduced, the regular sale, and the protest ceased. The publishers do not themselves, of course, wish to jeopardize the regular book-shop sale of any work published by them, or to interfere with book-shop sale generally; and, in consequence, no book is ordinarily included in a set until the active call for it at book-shops has ceased. No publisher issues a set of books to be sold on the instalment plan, or sells the plates for an instalment issue to another publisher, while the book is still selling rapidly over the counter. Sets of Joseph Conrad were sold by instalment while that author was still alive and producing, but no instalment set of Conrad ever included his most recent books.

This is principally true, not of books manufactured primarily for instalment sale, such as the *Harvard Classics*, or the *Book of Knowledge*, but of sets of fiction for which the book-shop sale would in itself be considerable.

APPENDIX FIVE

THE DEALER STUDY

Under the Direction of

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THE DEALER STUDY

INTRODUCTION

Purpose of the Dealer Study

The study was made for the purpose of ascertaining, by means of the actual experiences of automobile dealers, the effects of the instalment selling of automobiles.

Method of Approach and Sources of Information

It was first determined what information would be considered desirable, and this was then checked through submission to dealers in order to ascertain what the dealer could give from his records. An important phase of the desirable information which dealers generally could not give was the extent to which cars were sold with allowances made upon used cars turned in. This has significant bearings since the allowance made upon used cars in order to effect the sale of new cars is usually held to be much larger than the allowance made if no new car is sold. In other words, a used car has two values. One value is closely related to its possible resale price; the other is related partly to the resale price and partly to its use in effecting the sale of the new car. In the second case, its value may result in a lower profit to the dealer, in the total elimination of profit or in an

absolute loss. The history of the sale of used cars indicates that it usually results in some loss, which is offset in the profit derived from the sale of a new car. With this allowance, larger than the real value of the car turned in, being taken for the down payment of perhaps one-third of the price of the new car purchased, it must be recognized that the purchaser does not always actually pay the full purchase price. Unless the dealer knows the extent of his sales of new cars with used-car allowance and his sales without used-car allowance, he is in no position to determine accurately just where he stands or just how his profits are being affected. However, these figures on the new cars sold with used-car allowance were not obtainable.

Information of the detailed nature called for in the analysis was sought from the General Motors dealers because of the several price-classes of General Motors lines and because dealers in general might not have been interested in the matter. We believe, however, that the experience of General Motors dealers will be representative of the experience of automobile dealers as a whole.

A second line of approach which seems to throw light upon the status of the automobile dealer as a distributor of goods sold on instalment is found in the bank form which was sent to banks throughout the forty-eight states. It was felt that the banks' experience in financing automobile dealers would give concrete evidence of the status of the automobile dealer as a credit risk, since it would show the position of the dealer as a seller of goods on instalment and his status as compared to other businesses financed by the same banks. Requests for information were also sent to automobile finance companies; but the responses from these organizations have been too few to have any weight.

The Limitations of the Dealer Study

It will be readily appreciated that the study of the place of the automobile dealer in the field of instalment selling represents a study of only part of the field. *Therefore, the conclusions of this study, whether they may seem favorable or unfavorable, are an outgrowth of an analysis based simply upon the facts relative to the dealer.* Those facts may present instalment selling in a favorable light in so far as the dealer is concerned, or they may present it in an unfavorable light, or they may present it in both. Hence, it cannot be taken as an analysis which makes it possible to put a blanket approval or disapproval upon this method of selling. For instance, if in the analysis of the repossession history of the dealers we should find that the dealers consistently realize profits upon repossessed cars, it might indicate a sound dealer position. This fact, however, which we might consider sound from the dealers' point of view, might have resulted in considerable loss and suffering to the car purchaser. If the car purchaser has made a substantial down payment and has paid several instalments and is then unable to continue payments and consequently loses possession of the car, it may be that the financial loss which he has sustained has given him but little return. In such circumstances, the burden of the instalment sale might rest upon the consumer. Many aspects of such situations would not be disclosed in this analysis of the car dealers' experience. A sound dealer position might exist and be shown in our analysis without any reference to the position of the car purchaser, the manufacturer, or others affected.

Information upon Which This Analysis is Based

While the discussion and conclusions developed in this study are based upon a limited amount of informa-

tion, it is sufficiently comprehensive to make it reasonably certain that the picture for the years 1925 and 1926 is representative. It is also quite likely that the figures for 1923 and 1924 are representative of the General Motors lines. Because of the smaller number of cases in the earlier years, similar claims cannot be made for those periods; nevertheless, it will be seen that the returns from the dealers from 1919 to 1922 are not without value.

Emphasis is placed upon the probability of the figures being representative because of the fact that, in a preliminary study based upon approximately 40 per cent fewer returns than the final study, little difference was shown in the 1925 and 1926 relationships. Although the percentage of instalment sales of new cars in the final study for the years 1923 and 1924 are not in agreement with percentages in the preliminary study for those years, there is substantial agreement on used cars.

In the final figures based upon 160,823 new and used car transactions, 60.3 per cent of the *number* of cars sold were sold on instalment in the first six months of 1926, and of 130,055 transactions in 1925, 57.4 per cent of the total number sold were sold on instalment. Taking the year 1925 and the first half of 1926, making a total of 290,878 transactions, 59.0 per cent were sold on instalment. The figures of the preliminary study were used in Volume One, page 111, in making the estimate of the volume of instalment sales given there, the result being obtained through the weighting process outlined in that book.

The discussion and conclusions are based upon replies to questionnaires received from General Motors dealers in all parts of the country. The relation of the number of cars sold by these dealers to the total number of General Motors cars sold is indicated in the table below,

which relates to the year 1925. The figures to the end of June, 1926, are probably more representative. These represent the replies of those dealers who gave the complete information called for on the forms which were sent out. Other replies, in which the dealers gave but part of the information asked, usually the number of cars sold on cash and on terms, were not used.

Wherever the name of a city is used, the name indicates a branch office of the General Motors Acceptance Corporation, which, since 1919, has been engaged in financing instalment sales for General Motors dealers. This company is owned by General Motors Corporation. The dealer returns represent, in general, the dealers in the General Motors Acceptance Corporation area of which the city named is the commercial center.

TABLE I

RELATION OF THE NUMBER OF CAR SALES ANALYZED TO THE TOTAL NUMBER OF CARS SOLD IN GENERAL MOTORS LINES, 1925

Make of Car	Total General Motors Sales to Users, 1925 (U. S. Only)	Number of New Cars Sold in 1925 by Dealers Who Returned Forms	Percentage of New Car Sales of General Motors Cars Included in Dealers' Returns
Buick	180,172	33,741	18.7
Cadillac	22,217	4,394	19.8
Chevrolet	415,276	21,835	5.3
Oakland-Pontiac	39,665	3,231	8.1
Oldsmobile	37,261	2,322	6.2

Many dealers replied that they had no records which would make it possible for them to give the desired information. Some could not, or would not, give information on the most elementary point, the number of cars sold for cash and the number sold on instalment. Some dealers gave more complete information on particular points than others.

Responsibility for the Statistics and Their Compilation

The figures bearing on the dealer operations have been obtained directly from the dealers. The forms which they filled in were distributed, with few exceptions, through the General Motors Acceptance Corporation branch managers, who sent the forms to the dealers through the zone managers of the producing companies. The computations of the figures contained in the dealer replies were made by the Statistical Department of the General Motors Acceptance Corporation, and the complete tables are on file with the Company.

The 1926 Figures

Wherever, in commenting upon the dealers' figures, the year 1926 is mentioned, the time considered is the first half of 1926.

Section One

BANK EXPERIENCE WITH AUTOMOBILE DEALER ACCOUNTS

Purpose of the Bank Inquiry

Many attempts have been made to determine the amount of automobile paper outstanding, and the usual approach has been through the finance companies. There is a general opinion that complete statistics from the finance companies would give an almost exact picture of the situation. The fact is, however, that a considerable amount of financing is done by other than finance companies. There are some dealers who use their own resources to carry purchasers of cars, and who, when occasion arises, borrow from the banks on direct loans in order to make it possible for them to finance the retail sale without recourse to finance companies or without discounting the customers' notes at the bank. In other instances, the dealer discounts the car buyers' notes with the bank. One purpose of our investigation of bank experience with dealers was to ascertain the extent to which banks extended credit to the dealers; another was to determine the experience of the banks in handling a business in which instalment selling has played such an important part. The form used was a simple one, since it was felt that in order to secure replies in any considerable numbers it would be necessary to use such a form. It should be pointed out here that while the dealer study is based upon the experience of

TABLE II

BANK FINANCING OF AUTOMOBILE DEALERS*

	1925	1924	1923	1922	1921	1920	1919
Number of banks reporting on loans to dealers	269	227	186	153	125	96	96
Total number of dealers with borrowing accounts	1,227	935	771	516	416	299	236
Total amount of dealer borrowings in dollars	31,729,843.87	24,788,146.54	19,264,864.28	10,567,297.20	8,345,092.67	7,168,393.84	4,487,816.00
Total losses sustained on dealer loans in dollars	64,566.00	82,434.31	90,638.90	151,494.05	36,810.06	75,677.00	17,997.00
Average borrowings per dealer account in dollars	25,859.69	26,511.38	24,486.86	20,479.25	20,060.32	23.974.56	19,016.16
Average losses per dealer account in dollars	52.62	88.17	117.56	293.59	88.49	253.10	76.26
Ratio of losses to total dealer borrowings	.002	.003	.004	.014	.004	.015	.004
Average number of dealer accounts per bank	4.56	4.12	4.14	3.37	3.33	3.11	2.88

*Number of banks making returns, 503. It may be understood that the banks which were interested because they had had dealer accounts would be the ones most likely to return the questionnaires.

dealers in General Motors cars, the bank study is based upon replies from banks without regard to makes of cars or the qualities of various dealer organizations.

The summary on the preceding page is derived from the returns from 503 banks distributed over practically every state of the Union.

Bank Statistics on Automobile Dealer Business

The average borrowings per automobile dealer reached a high point in 1924 with $26,511.38, the next highest figure being an average borrowing of $25,859.69 in 1925. With the exception of 1920, in which year the borrowings were particularly large, it will be noted that there has been a gradual increase in the average borrowings. When this is considered in connection with the general decline in car prices over the period, it indicates that the dealers have been financing more, rather than less, through banks. The banks handling dealer accounts have apparently been willing to increase the number of dealers upon their books. In 1919, the average number of dealers per bank was 2.88; by 1925, this had increased to 4.56 dealers per bank. To state that the increase is due to a rapid increase in the number of automobile dealers does not affect the significance of the figures; for these figures are significant as reflecting the willingness of banks to accept dealer accounts.

The percentage of losses on total borrowings is important. It will be seen from the foregoing table that these losses have, in three years, been 4/10 of 1 per cent, dropping to 3/10 of 1 per cent in 1924 and 2/10 of 1 per cent in 1925. These losses can not be considered as representing a particularly favorable situation, since it is commonly stated that bank losses should not average over 2/10 of 1 per cent on loans. In 1920 and 1922, the percentage of losses on borrowings had risen to 1.5 per

cent and 1.4 per cent respectively. It will be noted, however, that while 1/5 of 1 per cent is considered as the maximum estimate of a fair loss percentage, yet, in the words of several students of bank credit: "This percentage naturally varies over a series of years in accordance with general business conditions and, in the case of banks dealing with one class of industry, with conditions in that class. For example, a bank could not expect to show the same percentage in 1921, after the great change in general conditions, as it had shown in a year when business was increasingly active."[1]

Certain facts must be kept in mind in considering the above figures. Of the 503 banks which returned the forms, many had never carried dealer accounts and others which carried them did not have the information in such condition that it could be given without a great deal of labor. This labor, apparently, they were unable or unwilling to perform. Of the banks which made reports on dealer experience, many furnished the information for but one year, or for the more recent years, because of the trouble involved in obtaining the material for the earlier years. Of the banks making returns, 95 gave the information complete from 1919 through 1925, as summarized below:[2]

	1925	1924	1923	1922	1921	1920	1919
Number of dealers with borrowing accounts......	466	442	426	411	398	372	331

[1] *Credits;* American Institute of Banking.

[2] The figures on the "number of dealers with borrowing accounts" include those from banks which reported the number of borrowing accounts but did not report the amount of dealer borrowings. In Table II, the "number of dealers with borrowing accounts" includes only those from banks which also gave the "amount of dealer borrowings."

Including the 95 above, 151 banks gave complete records from 1922 on, as summarized below:

	1925	1924	1923	1922
Number of dealers with borrowing accounts...	706	700	668	616

In the banks reporting from 1919 through 1925, the number of dealer accounts increased 40.8 per cent; and in those reporting from 1922 to 1925, it increased 13.4 per cent. In the banks reporting from 1922 through 1925, the number of dealers with borrowing accounts has increased 14.6 per cent. The significance of these figures is to be found in the fact that the banks which have been giving banking accommodations to dealers since 1919 have evidently been quite willing to increase the number of such accounts, notwithstanding the fact that they have passed through a period of acute depression. Of the 151 banks, one New York City bank which had been carrying one dealer since 1919 closed out the account in 1924, and one bank in Indiana which had had two accounts since 1920 and one account in 1923 had closed out its final account by 1923 because the automobile-financing notes had proved unsatisfactory.

The question may well be raised whether the sample taken above is representative of the bank-dealer relationship. Certainly the results run counter to the usual opinion that dealer borrowings from banks in order to finance the retail sale of cars are insignificant. Attention is called to the fact that these replies have come in from cities of various sizes in practically every state.

A further check on the extent of the dealers' use of the bank is found in the responses of the dealers to

an inquiry as to whether they financed the retail sale of passenger cars through local banks. Of 629 General Motors dealers making replies at the time this section of the study was being written, 281, or 44.7 per cent, were either discounting customer paper or borrowing upon their own notes to finance the retail sales of passenger cars as well as financing through finance companies. Several of these indicated the extent to which they were using the banks. It was stated by 17 dealers that they were using the banks to discount customer paper or to borrow on their own notes to some slight extent; two stated that they financed sales through borrowing on their own notes to the extent of 5 per cent of the cars sold on instalment; two stated that they discounted customer paper at the bank to the extent of 10 per cent of their instalment sales, and two to the extent of 40 per cent. One reported that 50 per cent of his time sales were discounted and that 10 per cent were financed through borrowing on his own note. One reported that 20 per cent of his instalment sales were discounted. Fifty-three reported that financing through the local banks was the only method employed by them to finance the retail sales of passenger cars. This represents 8.4 per cent of the total number of dealers, 629, reporting upon this question.

Bank Methods of Extending Accommodations to Dealers

As the following summary will show, the report of the banks on the method used in extending accommodations to dealers agrees with the dealer report on the method of financing retail sales, the one most commonly used being that of discounting customer paper at the local bank.

Of the total of 503 banks reporting, a high percentage, or 45.3 per cent, are extending loans to dealers and are

	Bank Reports of Accommodations to Dealers	Dealers' Reports of Accommodations from Banks
Number reporting direct loans	88	76
Number reporting the discount of customer paper	101	123
Number reporting both direct loans and discount of customer paper	39	82

aiding either directly or indirectly in the retail financing of passenger cars; 17.5 per cent are lending on the dealers' own notes; 20.1 per cent are discounting customer paper; 7.8 per cent are giving both forms of accommodations. It may be concluded, therefore, that while the greater part of automobile financing may be effected through finance companies, banks are doing a considerable amount of such financing.[1]

Are the Automobile Dealer Accounts More Troublesome Than Other Accounts?

This question was asked in order to ascertain whether the banks which were handling or had handled such accounts considered them satisfactory. If the banks replied that they were more troublesome than other accounts, they were asked to state the reasons therefor. Some banks limited their answers to the simple statement that the accounts had proved, or had not proved, to be more troublesome. Others extended their replies to more or less complete statements of their experience. On the next page will be found a summary of the direct replies to the question.

Of the banks which reported the dealer accounts more troublesome, a few indicated that they had difficulty in collecting the amounts due on time. The 17 which

[1] Some of the banks reporting the extension of accommodations to dealers did not report as to the method used.

Number of banks considering dealer accounts more troublesome than others	58
Number of banks considering dealer accounts no more troublesome than others	91
Number of banks considering dealer accounts more troublesome because of the detailed work involved in handling them	17

reported the dealer accounts unsatisfactory because of the detailed work involved in handling them, indicated that what they meant was that such accounts placed upon the bank the burden of collecting a large number of small items, and evidently referred to the accounts of dealers who discounted their customer paper with the bank. There is, of course, nothing in this which would justify a claim that instalment selling is unsound. However, when the bank reports difficulty in collecting amounts due at the time when payment is called for, we must assume either that the method of selling is unsound or that the method, if sound, has opened the way to certain practices which are unsound, or that the bank is not efficient in its collection efforts, or not organized to meet the particular requirements attending instalment collections. If unsound practices are inherent in the use of personal credit, then it is dangerous; but if they are not inherent, their elimination will remove the dangers from this cause. If we omit the 17 banks which specifically stated that the accounts were considered more troublesome because of the amount of detailed work involved in handling the accounts, 61.1 per cent of the remaining 149 which reported on this question state that the accounts of automobile dealers are not more troublesome. Whether this percentage would be sufficient to justify a statement that unsound practices are susceptible of being eliminated, or that the other banks' systems are susceptible of improvement, is a matter of opinion.

Another view of the experiences of banks with dealer accounts is found in the summary of the more or less extended replies given below.

UNFAVORABLE BANK REPLIES

CASE 1

"Troublesome to the extent that during quiet times past-due files are choked with over-due paper." (Number of years' experience and losses not given.)

CASE 2

"We find that the average automobile dealer account is unprofitable. Their notes are renewed each thirty days, causing additional clerical labor, and they often go past due." (5 years' experience; loss $15,000 in one year.)

CASE 3

"We lost heavily on automobile dealers in 1920–1921. Since then we have practically cut them out."

CASE 4

"We have had quite a few failures *in our city*. In all cases we attribute—too much liberality shown in trade-ins and keen competition." (7 years' experience, no losses.)

CASE 5

"Don't think it good banking to finance the sales of passenger cars." (This is a matter of opinion, as the bank had done no financing.)

CASE 6

"Usually have proved unsatisfactory." (5 years' experience; one year's loss, $5,000.)

CASE 7

"During 1919–20 our experience in this line was quite unsatisfactory and somewhat disastrous and we have quit handling any paper of this sort."

CASE 8

"Payments seldom made on due date and often unpaid." (6 years' experience; $9,500 lost on about $1,000,000.)

CASE 9

"Some years ago a line of automobile-financing notes proved unsatisfactory and we discontinued same." (4 years' experience, no losses.)

CASE 10

"Most dealers are poor managers and payments are slow." (4 years' experience; one $700 loss, one $630 loss.)

CASE 11

"When in need of credit need abnormal amounts." (4 years' experience; no losses.)

CASE 12

"More troublesome because notes are renewed monthly." (7 years' experience.)

CASE 13

"Because most dealers are not efficient credit men." (4 years' experience; loss of $12,000 in one year.)

CASE 14

"Yes—all went broke except one." (5 years' experience; reports no losses sustained on these accounts.)

FAVORABLE BANK REPLIES

CASE 1

"Dealer accounts not found to be more troublesome than accounts in other lines, but as a matter of fact on well-known and easily merchandised cars we consider the risk superior to that taken in many lines."

CASE 2

"We hate to say we have never had any losses on automobile dealer business without knocking on wood, but this is absolutely true." (This bank extending $170,000 to dealers in 1925 and $332,500 in 1924.)

CASE 3

"In the past three years we have been doing business with from ten to a dozen automobile dealers, both in direct loans and in purchasing their time contracts. The total amount of time contracts in any one year will average close to $500,000. We have had no losses. We commenced dealing quite extensively in this kind of paper in 1920 and the statement that we have sustained no losses covers the entire period through which we have had this business."

CASE 4

"We have been carrying loan accounts for five dealers since 1919 and are still carrying these accounts. This year, 1926, we are carrying the accounts of six dealers. During this period the total amount of loans extended has been about $150,000. We have never lost any money on these loans."

CASE 5

"Our experience has been very good and we have had less grief than with other paper." (Experience and loans not given.)

CASE 6

"No particular trouble with reputable dealers; payments are usually made with more promptness than any other kind of paper especially when handled by live, energetic dealers." (5 years' experience; loss one year, $600.)

CASE 7

"We have very little complaint on the automobile paper we handle." (4 years' experience; one loss, $200.)

CASE 8

"No, because we familiarize ourselves with the borrower's responsibility before extending credit." (6 years' experience; no losses.)

CASE 9

"We have never had any trouble with our loans whatever." (4 years' experience; no losses.)

CASE 10

"Very satisfactory." (4 years' experience; no losses.)

CASE 11

"Our instalment paper is very good." (6 years' experience; losses "negligible.")

CASE 12

"We still handle this class of business, which we find profitable and satisfactory." (7 years' experience; $2,000 loss on $1,265,000.)

CASE 13

"Very satisfactory." (7 years' experience; no losses.)

CASE 14

"Our accounts have been very satisfactory." (7 years' experience; no losses.)

CASE 15

"Very satisfactory." (7 years' experience; loss of $5,000 on $320,000.)

CASE 16

"Banking relation with automobile dealers is and has been satisfactory." (7 years' experience; no losses.)

CASE 17

"Very satisfactory accounts." (1 year's experience; no losses.)

CASE 18

"The high-grade automobile dealer account has proven to be very satisfactory." (2 years' experience; no losses.)

CASE 19

"Notes invariably met at maturity." (1 year's experience; no losses.)

CASE 20

"We find that notes are taken care of promptly." (1 year's experience; no losses.)

NEUTRAL REPLIES

CASE 1

"Dealers took care of direct paper promptly but the receivables were not generally desirable." (Experience and losses not given.)

CASE 2

"Conditions varied according to the personal habits. Two were unsatisfactory and four satisfactory." (This dealer's losses and experience not given.)

CASE 3

"Our experience of handling automobile notes was unsatisfactory. At present we have two satisfactory automobile dealers' accounts with limited direct credit." (4 years' experience; never had a loss.)

CASE 4

"Don't believe causes are peculiar to automobile dealers' business unless possibly the automobile line attracts some who are not personally equipped or lack capital more readily than other lines of business. Temptation to become unethical or in fact crooked seems to be greater in this line." (6 years' experience; had one loss in one year of about $18,000 and some losses on used-car dealers.)

CASE 5

"Not materially different from other lines." (Losses and experience not given.)

Bank Replies on Causes of Dealer Failures

It was to be expected that banks which had made loans to dealers and had sustained losses would be in a position to give information on the causes of dealer failures and that their replies to the third question would be valuable. A summary of these replies is given below. Some bankers were frequently quite willing to give the causes of dealer failures, even though they had never had any banking relations with them and had so stated. One of these gave the chief cause of failures as lack of capital and too large allowances on used cars; another explained

them as due to poor management and dishonesty; a third laid the cause of failures to the maintenance of expensive establishments. One bank which had been in business eighteen months but had had no experience did not consider the dealer "good, safe business"; and another considered the dealer "risky," although it had sustained no losses. It is interesting to note to what extent those bankers who had written across the face of the form "never handled dealers," or some equivalent phrase, were willing to give opinions on the causes of dealer failures. This is usually the case when questionnaires are sent broadcast which ask simply for opinions on the soundness or unsoundness of instalment selling. Apparently, such opinions are of value only as opinions, since they are based upon neither facts nor experience.

It was hoped that some banks might have made careful analyses of the causes of dealer failures. This, however, was not the case. Consequently, while the following opinions are better than those mentioned above to the extent that they are based upon experience, they still leave something to be desired.

BANKERS' OPINIONS IN REGARD TO THE CAUSES OF DEALER FAILURES

1. Too great allowance on used cars	50
2. Lack of capital	26
3. Mismanagement or lack of ability	23
4. Dishonesty	10
5. Lax credit extension	14
6. Credit terms	5
7. Special	
(*a*) Failure of the manufacturer	1
(*b*) Excess overhead	2

This does not, of course, indicate that these bankers have taken particularly large losses. One bank gave the causes of dealer failures as under-capitalization and bad management as evidenced by long terms and large trade-

in allowances; yet its dealer losses in seven years on total loans of $800,000 amounted to only $1,000.

It is interesting to note that in the opinion of bankers who have handled dealer accounts and taken losses upon them, the outstanding cause of the dealers' difficulties is the allowances made upon used cars. Lack of capital and lack of business ability follow next in order.

In interpreting favorable and unfavorable comment, the factors which may have given rise to the comments made must be taken into consideration. One bank writes:

"In our opinion it is seldom you find a dealer who has the faintest idea of merchandising. As a rule he goes into the business on the wave of popularity born with the advertising of new cars or models wherein business is more a matter of order taking than selling, and he splashes on with no regard for the inevitable rainy day which, on its approach, finds both his foresight and insight dulled, and on its arrival finds him a fair weather business man. Incapacity is the trouble, in our judgment, in most failures."

If we accept the above statement as representative, then, in so far as dealers of this type are relied upon to control instalment sales of automobiles, credit may be extended upon an unsound basis; but this is a condemnation of the dealer as a business man and not of consumption credit. Improvement in the dealer organization, either through selection or by training, would probably eliminate a great deal of such criticism as that given above.

Another bank takes a more or less neutral attitude. It states that:

"The automobile business is just like any other. There are high-class people in the business with whom we would not hesitate to deal; with others we would not care to deal under any arrangement."

It may well be asked whether the business as carried on develops certain characteristics in the dealer, or whether the type of dealer accepted as representing the manufacturer is the cause of the business being carried on as it is. It may also be asked whether the bank losses on dealer accounts are due to the fact that the dealer is doing an instalment business, and therefore constitutes a greater risk. Figures obtained from General Motors dealers for the seven and one-half year period from 1919 to the end of June, 1926, show that of the *total* number of passenger cars sold in 1922, 43 per cent of the cars were sold on instalment; and that in the years 1923, 1924, and 1925, 49 per cent, 54 per cent, and 57 per cent respectively were sold on instalment.[1] Yet, in 1922, the bank losses[2] were 1.4 per cent of the dealer borrowings, whereas in the years 1923–1925 the losses were 4/10, 3/10 and 2/10 of 1 per cent. Certainly these figures do not sustain the contention that the dealer has become less satisfactory as a credit risk since instalment selling has increased; for the percentage of bank losses on dealer accounts was greater in the years in which the extent of instalment selling was smaller. The years following the post-war inflation period were years in which failures were large in most lines of business, and we have no means of knowing whether instalment businesses failed to a greater degree than cash businesses. The nearest approach to such knowledge is found in the bank replies as to whether they considered the dealer accounts more troublesome than other accounts. It has already been stated that the banks which have reported dealer experience from 1919 through 1925 and which therefore have gone through the deflation period seem willing to increase their dealer business, both as to the number of accounts and as to the average borrowings.

[1] Table XL on file with G. M. A. C.

[2] Without reference to General Motors dealers.

Section Two

NEW-CAR EXPERIENCE OF DEALERS

Relation of the Number of Cars Sold for Cash to Those Sold on Instalment
Relation of Instalment Sales to Price-Classes
Relation of Instalment Sales to Geographical Areas
New-Car Prices and Used-Car Allowances
Terms of Sale
Repossessions by Dealers

Relation of the Number of New Cars Sold for Cash to Those Sold on Instalment

From the returns received from the dealers in the products of the various units of the General Motors, the following summary of the percentages of new cars sold on instalment to total sales of new cars is given:[1]

	1926 (*First Half*)	1925	1924	1923	1922	1921	1920	1919
All G. M. Lines.	55.9	52.0	50.7	45.8	37.1	33.7	29.2	32.6

Relation of Instalment Sales to Price-Classes

The figures show that about 56 per cent of the new cars were sold on the instalment basis in 1926 and 52 per cent in 1925. These figures are contrary to the usual estimate, which is to the effect that about 75 per cent of the cars are sold on instalment. The percentage, indicated by the returns of the General Motors lines, is in

[1] The figures on the percentage of cars sold on instalment are not comparable to those used in estimating the values of instalment sales (Vol. I, p. 111). In the latter instance, the percentages were weighted according to the value of the cars comprising the total.

agreement with the recent analysis of the Dodge Company. This covered approximately 40,000 sales of Dodge cars and disclosed the fact that about 55 per cent of these sales were made on time.[1] The General Motors figures are, in all probability, representative of the automobile industry in general, because of the several price-classes included in the General Motors lines. Apparently, the higher the price of the car, the smaller is the percentage of cars bought on instalment.[2] This fact stands out clearly in the table below, cars being listed in the order of their price-class, *A* representing the least expensive car.

TABLE III

PERCENTAGE OF NEW CARS SOLD ON INSTALMENT*

G. M. Lines	1926 (*First Half*)	1925	1924	1923	1922	1921	1920	1919
A.......	68.6	68.6	70.6	64 4	57 9	59 2	73.7	74.8
B.......	62 1	59 9	61.9	70.8	62.9	46 9	53.8	47.6
C.......	64.3	67 4	64 8	60.2	53.9	18 8	16.4	7 6
D.......	46.9	42.5	42.7	41.3	37.0	35 6	26.0	29.4
E.......	28.7	28 8	29.7	21 6	14 6	14 6	11.8	8.3
All G.M. Lines..	55.9	52.0	50.7	45.8	37.1	33.7	29 2	32.6

* The number of dealers reporting in years prior to 1924 is probably not large enough to be representative.

There is apparently a difference in the degree of what we might term financial strain involved for the purchasers of new cars in the various price-classes. The

[1] "To get an average of the prevalence of instalment buying," said Mr. Fohey, Treasurer of Dodge Brothers, Incorporated, "we took 39,095 sales of new cars made by dealers over a period of several weeks and analyzed them. We found that 17,629, or 45.1 per cent of the buyers laid down the full amount when they took delivery of their cars and trucks." From the *New York World*, November 3, 1926.

[2] To what extent the instalment selling of Ford passenger cars would affect these percentages as representative of the industry as a whole, the author makes no attempt to estimate.

buyer of the higher-priced car seems to be better able to afford the car of his choice than is the buyer of the lower-priced car. It is possible that if the buyer of the higher-priced car is not able to pay for his purchase immediately from funds in hand he will prefer to borrow from his bank, so that neither the dealer nor the finance company is called upon to extend financial assistance. There is a difference in the nature of the relative buying power as between the purchasers of the higher-priced cars and those of the lower-priced cars; and it is probably this difference which explains, to a large extent, the smaller percentage of repossessions of the more costly cars.[1]

On the basis of the dealers' returns and car prices, two factors stand out in rather bold relief. If the figures are representative of either the General Motors Corporation or the automobile industry as a whole, it is surprising to discover that such a high percentage of new cars was sold on instalments during the years 1919–1921. Probably it would be found, if the figures could be obtained, that a much larger percentage of cars than is usually estimated was sold on instalments before the war period. Time sales of automobiles are usually thought of as a post-war phenomenon; but our results seem to indicate that this method of selling existed to an important extent during the war and pre-war periods. It is doubtful whether the finance companies can throw much light upon the situation. On the other hand, the banks and the dealers, if they have survived through so long a time, might answer the question, as the dealers were probably financing their sales through borrowing from their local banks on their own notes or by discounting their customers' paper.

The second factor that stands out is the probability of a relatively small increase in recent years in the amount of automobile paper created through instalment sales.

[1] See Table VII.

The above figures indicate that between 1919 and 1926 the percentage of new cars sold on instalment, as shown by the dealer figures, increased from 32.6 per cent in 1919 to 55.9 per cent in the first half of 1926. This represents a growth, over the period, of 71.5 per cent. In the same period, the composite price of General Motors cars dropped from $1,500 to $1,019, or 32.1 per cent.[1] From 1924 to 1925 the percentage of new cars sold on instalment increased 1.3 per cent, but the composite price dropped 7.6 per cent. From 1925 to 1926, the percentage of new cars sold on instalment increased 3.9 per cent, but the composite price dropped 4.8 per cent.[2] A possible explanation of this seemingly wide divergence between the usual estimates and our figures may be found in the rather pronounced redirection of the paper from local banks to finance companies and in the concentration of a large volume of the paper so redirected in the hands of relatively few large organizations.

Relation of Instalment Sales of New Cars to Geographical Areas

The returns seem to indicate that the territory in which the purchaser lives has some bearing upon the method employed in his purchase. There was a wide variance in the percentage of cars sold on time among dealers in the same organization in different sections. It was found, however, that it would be erroneous to conclude from this that time selling was more generally practised in one community than in another, since several factors, such as the popularity of the particular car in the territory, the difference in the character or strength of the dealer organizations, and so forth, might easily have affected the result.

[1] This figure is based upon the total value of all car sales divided by the total number of units sold.

[2] See Table IV.

Furthermore, the variances in percentages by cars and by territories were not supported by a uniform number of returns. A thorough analysis of this situation indicated that it would be futile to attempt any reliable deductions as to whether instalment selling was more prevalent in one section than another unless the facts relating to cars of all makes could be combined from complete returns from all dealers and the results studied in the light of local conditions.

New-Car Prices and Used-Car Allowances

Whether cars are purchased for cash or on instalment, the demands of car ownership upon the buyers have become, apparently, less burdensome from the point of view of the original cost of the car and the real income of at least a large part of the population. The general trend of General Motors car prices since 1920 has been downward. The movement in used-car allowances, as reported by dealers, has been irregular, but definitely downward. As shown in the following table, the net result has been that a car owner who traded in his used car for one of the General Motors lines was required to make a somewhat smaller money outlay in 1925 and the first six months of 1926 than in most of the earlier years. The dealer, however, appears to be obtaining at least as high a percentage as formerly of the new-car price when he makes a trade-in allowance, although it must be remembered that the ratio of his trade-ins to new-car sales was less in the earlier years.[1]

The items of importance to most new-car purchasers are the price of the car and the cash outlay beyond the used-car allowance. Whether this is the correct attitude or not, there are some who maintain that in any price-class almost any car is good at the price. Such individuals are likely to be influenced in their decision as to the

[1] See Table XIV.

TABLE IV

ESTIMATED COMPOSITE DELIVERY PRICE, INCLUDING TAX AND FREIGHT*

Year	Buick	Cadillac	Chevrolet	Oakland, Including Pontiac in 1926	Olds-mobile	Average†
1919	$1,725	$3,952	$ 906	$1,339	$1,594	$1,500
1920	1,937	4,857	1,035	1,933	1,787	1,733
1921	1,814	4,338	843	1,428	1,639	1,573
1922	1,546	4,033	696	1,323	1,348	1,193
1923	1,544	4,387	649	1,240	1,140	1,051
1924	1,752	4,121	646	1,273	1,106	1,159
1925	1,586	3,880	681	1,301	1,126	1,071
1926	1,555	3,821	670	1,076	1,098	1,019

* As reported through General Motors Acceptance Corporation.

† The average composite delivered price is derived from the price of each make of car, multiplied by the numbers sold, divided by the total number of cars sold.

TABLE V

RELATIONSHIP OF COMPOSITE DELIVERED PRICE OF CARS TO THE USED-CAR ALLOWANCES OF DEALERS

Year	Percentage of Composite Delivered Price Paid by Purchaser in Money						Average Amount Over Used-Car Allowance Paid by New Car Purchaser*
	Car A	Car B	Car C	Car D	Car E	All G. M. Cars	
1919	63.1	67.0	51.7	66.7	69.0	66.0	$ 990.00
1920	63.5	76 5	46 7	66 8	69.0	66.7	1,155.91
1921	65.8	74 9	62 8	60.3	65.1	62.6	984.70
1922	62.4	74 5	61.3	68.8	73 3	68.7	819.59
1923	63.9	69 6	65.4	68.6	75.7	68.6	720.99
1924	65.2	55.1	71 8	72.1	79.6	70.6	818.25
1925	66.4	58.9	73.3	71.8	74.4	69.9	748.63
1926 (*First Half*)	69.4	62.2	74.2	71.4	75.0	70.3	716.36

* See Tables IV and XIV. See also Tables XLI–LXV on file with G. M. A. C. The figures were obtained by taking the percentages of the composite delivered price as shown in the seventh column of Table IV.

make of new car they will buy by the allowance offered for their used car. Whatever may be the experience of any particular dealer or any particular territory, the dealer returns indicate that since 1920, with the exception of 1924, the amount of cash required over and above the used-car allowance has declined.

If the spread between the new-car prices and the used-car allowances decreases, there is obviously a stimulus to new-car purchases; but if this decrease is effected at the cost of dealers taking losses on their used-car business, there must be a point beyond which the allowance can not go, unless the used-car losses are entirely to absorb the new-car profits. A weak point in the chain is the fact that some dealers do not know the status of their used-car business; in many cases, they do not even know the cost of reconditioning and selling used cars. They apparently estimate their profits or losses by considering whether the selling price of the used car is greater or less than the allowance made.

Liberal used-car allowances, like liberal terms of sale, make it possible for the dealer to change the nature of his assets from merchandise to receivables and a small amount of cash, and to borrow on his receivables, at least temporarily, for additional cash. Some dealers complain that they are forced into unsound practices because of the manufacturers' pressure upon them to sell new cars, and that they are compelled to do some things against their better judgment. This complaint of dealers is not limited to the manufacturers of a particular car. Some consider any kind of sales stimulus from the manufacturer as "forcing." On the other hand, other dealers complain of their inability to obtain cars from the manufacturers rapidly enough to meet the demand for cars.

Gyrating new-car prices are, in almost any circumstances, the cause of considerable worry to the dealer.

In a highly competitive industry, the price changes may be expected to be frequent and drastic. Dealers, as well as the less successful manufacturers, in such industries, are certain to be in a rather precarious position. Whether the goods be sold on a cash basis to the consumer, or on a credit basis by the producer to the distributor, or on a credit basis by the distributor to the consumer, the competition is likely to be rather intense. The difference between the cash sale and the credit sale is that the latter may bring with it a series of additional problems and a new basis of competition—competition based upon terms of sale. When the product sold is in a field in which it is possible to make allowances upon the product of another manufacturer, or upon an earlier product of the seller, then there enters a new basis of competition, which, to a large extent, amounts to price competition in another guise. Even were the goods sold on a cash basis, this form of competition might enter, for it is not so much the fact of cash or credit which determines the practice of making allowances as it is the nature of the article itself. Instalment selling deepens the market and hence increases the size, and probably the number, of the problems growing out of the sale of goods with allowances on former purchases. However, not all of these problems are peculiar to instalment selling.

The price changes under which the dealer has operated are shown in the following summary. The composite car price for each year is related to the composite price of 1919 taken as 100.

1926	1925	1924	1923	1922	1921	1920	1919
67.9	71.4	77.3	70 1	79 5	104 9	115.5	100[1]

[1] With taxes and freight included.

How do the buyers react to the changing car prices, and how far do dealers go, in one way or another, in order to overcome the "buyer resistance" which develops from buyers' knowledge of the price situation? What does the dealer do under a system of instalment sales? What is the difference in the nature of the resistance which he meets? What is the difference in the buyers' attitude after they have purchased on a time basis? If selling for cash, the dealer may offer to divide his commission with the buyer or to grant him a rebate in the event of falling prices; or he may grant the buyer an unduly large amount upon a trade-in. If selling on credit, he may indulge in the same practices; but since the instalment method of sale increases the depth of the market, the dealer may be called upon to do these things in a greater number of sales. He may not change the nature of the problem presented, but he may change its relative importance. Should he increase the used-car allowance and decrease the spread between the allowance and the new-car price, he would also increase the depth of the market, bringing in as possible buyers of new cars, in a higher price-class, people less able to afford the extra cost. Under the instalment method, the dealer may again deepen his market by his down-payment requirement or his credit period, thus bringing in purchasers from additional strata of society. Whatever the cause, some of these purchasers may feel that they have been defrauded if the prices of later models drop through any considerable range, or if the drop in the new-car prices pulls the resale price of the used car down to a figure below that which the owner thinks he should obtain after a year or two years of use. If, after a period of time, the car owner finds the upkeep a burden and desires to dispose of the car, and if he finds its resale value small, resistance to further payments may result, and the final consequence may be the repossession of the

car by the dealer or by the finance company. Considering all these possibilities, a drop from $1,733 to $1,193 in the composite price of General Motors cars from 1920 to 1922, regardless of the cause, might have been expected to result in a greater number of repossessions, even had there been no business depression, particularly when we remember the larger allowance then made upon the old car traded in. Such consequences are not, of course, present under cash sales.

On the other hand, increasing new-car prices may have the opposite effect. The dealer was in a position to benefit from the increasing new-car prices in 1920, and again in 1924, in so far as the increased price of the new cars was reflected in an increased market value for the used cars accepted as trade-ins.[1]

It is true that, in considering the used-car allowance in connection with the sale of any particular make of new car, the average-allowance figure may be misleading. An analysis for each area, would be of great value, but the returns from many of the areas have been too small to be representative.

Terms of Sale of New Cars

The desirable average terms of sale on new cars have now been established as approximately one-third down and twelve monthly instalments. There seems, however, to be a general impression that many cars are sold with less down and with the payments spread over a longer period.

Some of the used cars are traded for other used cars and the actual allowance on these is probably smaller than the allowance made upon used cars traded in for new ones. The average used-car allowance upon trade-

[1] There is a danger of overemphasizing the used-car situation which results from the change in new-car prices. In actual practice, the dealer does not carry a large supply of used cars on hand, but disposes of them quickly.

ins is probably higher than the figure given in our tables. Hence, if we consider the above percentages as representing the trade-in allowances, these allowances are sometimes more than the percentage required as down payment. Since it is a fairly general practice for some dealers to allow more on the used car traded in than the price for which it can be sold, the new-car buyer has really paid in perhaps a third or less of the actual new-car value. It is generally accepted that the depreciation on a new car is very rapid in the first period of its use since as soon as the car is driven it becomes a used car. The later depreciation is much less rapid. Since this is the case, is it not more important to place the emphasis upon larger payments in the early months immediately after purchase, with decreasing payments in the later months? Is there really any sound reason, financially, for so much stress being put upon twelve equal monthly instalments? While it might be more difficult to effect the sale in the first place if larger payments were required in the first months and then tapered off into smaller payments in the later months, would it not be less difficult for the cars to stay sold? Is there any virtue in twelve equal monthly instalments which puts them above, let us say, fifteen unequal monthly instalments? Under the latter plan, the decreased instalment payments would be falling due when the expenses of maintenance might be increasing and the exhilaration of new-car ownership declining. Under such a system of payment, the dealer or the finance company would seem to be in a stronger position than at present, since they would be more adequately protected in the period when they most need protection. This, however, is no new thought, the reason the system is not employed being that the higher payments in the earlier months represent a financial burden out of line with the current earnings of the buyer, that they set up sales resistance, and that the seller is

required to assume the burden of figuring his charges upon many different amounts.

New cars are sometimes sold on instalment on terms longer than the average of twelve months. On the other hand, many purchasers pay for their cars in less than twelve months. It appears that these opposite variations from the average practically offset each other.

The percentage of new cars sold on terms over twelve months underwent its greatest degree of expansion between 1923 and 1924. There was a slight drop in 1925 and a considerable degree of expansion in the first half of 1926.

It would seem, however, that there is no logical reason why any arbitrarily selected combination of down payment and number of instalments should be assumed to constitute sound credit practice. On the other hand, it seems obvious that, if the circumstances and ability of the purchaser to pay are not assumed, but if a real effort is made to fit the payment schedule to the assured income of the purchaser, as disclosed by credit investigation, the credit risk will be reduced to those circumstances or misfortunes which can hardly be foreseen, and the possibility of the purchaser's enthusiasm inflating his idea of his ability to pay will be greatly lessened.

Repossessions by Dealers

Whatever burden and loss there may be connected with the repossession of new cars, the dealer does not assume any great proportion of them. This is shown on the next page in the table of repossessions made by dealers reporting on this item.

While the number of dealers who have reported their repossession history is small and the information on some of the cars, especially in the earlier years, is somewhat meagre, the above figures support the general

TABLE VI

AVERAGE NUMBER OF REPOSSESSIONS OF NEW CARS PER REPORTING DEALER*

	1926 (*First Half*)	1925	1924	1923	1922	1921
All G. M. lines....	.98	1.24	1.25	.84	.33	.76

*See Tables CXXXVII-A to CXLI on file with the General Motors Acceptance Corporation. Prior to 1924, a relatively small number of dealers reported, and the number was so small for 1919 and 1920 that these years were not included.

conclusions based upon conversations held with dealers in the field. It seems fair to infer that the repossession of new cars by dealers is not a particularly pressing problem for them. To the extent that new cars may be repossessed to a degree greater than that indicated from the sources of information used, the burden is not borne by the dealer.

The dealer repossessions of new cars are and always have been quite insignificant. In the later years covered in this study, it is possible that a large part of the new-car financing has been shifted to the finance companies and that the burden of new-car repossessions with their resultant losses, if any, is now assumed by these companies. It has been impossible to secure exact information upon finance company losses in the repossession of new cars. Gossip in the field seems to indicate that some companies, particularly in certain areas, have sustained large losses on automobile paper; but no complete figures comprising the experience of all, or of a representative number of, finance companies are available for losses on either new or used cars. Whatever the finance-company statistics may disclose, the dealer has been fortunate in his handling of new cars on instalment.

What are the implications of the figures on the average number of new cars repossessed by dealers? Do they

imply that dealers are financing new cars through non-recourse companies, or that the dealer is so using the possible financing methods open to him that he is doing his own financing, or financing through recourse companies for his best risks and having the non-recourse companies take the greater risks? This is, of course, contrary to the claim of the non-recourse company that it sets higher credit standards than do the recourse companies because of the fact that it can not look to the dealer for payment.

Our figures seem to indicate, on the whole, that the higher the price of the new car sold on instalment, the fewer the repossessions. This is probably due to the fact that the instalment buyer of the high-priced car takes advantage of that method of buying as a temporary expedient, having in reserve resources upon which he may draw if necessary.

With the larger amount of money involved in the sale of a new car, there is a stimulus to more careful credit analysis than is the case with used cars, unless, of course, the used car is a high-priced one. Not only is there such a stimulus, but the facts upon which to base an analysis are more readily available and the standards more clearly established. This is certainly true of the medium and high-priced new cars. Among the people of the lower-income groups, it is frequently more difficult to obtain information upon which a satisfactory credit analysis can be made, and the seller must frequently face a situation in which it is difficult to decide whether to refuse the sale or to take the chance.

Whatever the explanation of the small number of repossessions of new cars by the dealer, up to the present the financing of the sale of new cars on instalment finds the dealer in a safe position.

Section Three

USED-CAR EXPERIENCE OF DEALERS

Relation of the Number of Used Cars Sold for Cash to the Number Sold on Instalment
Relation of Instalment Sales of Used Cars to Price-Classes
Relation of Instalment Sales of Used Cars to Geographical Areas
Terms of Sale on Used Cars
Used-Car Allowances
Repossession by Dealers
Profits and Losses
Dealer Reactions to the Used-Car Situation

Relation of the Number of Used Cars Sold for Cash to the Number Sold on Instalment

The following summary represents the percentage of used cars sold on instalment:

1926 (*First Half*)	1925	1924	1923	1922	1921	1920	1919
65.2	62.8	57.4	54.8	51.6	50.7	63.6*	44.5

*The size of this percentage is probably due to an error in one dealer's figure, which, because of the small number of dealers reporting, influenced the percentage figure unduly.

These percentages, like those relating to new cars sold on instalment, are lower for the later years and higher for the earlier years than the usual estimates and indicate that fewer automobiles are being sold on an instalment basis than is usually deemed to be the case.

Relation of Instalment Sales of Used Cars to Price-Classes

The percentage of used cars sold on the instalment basis varies with the dealers in cars of varying price-

classes as is indicated by the following table, the dealers in the high-priced cars selling on instalment less frequently than dealers selling the lower-priced cars.

TABLE VII

PERCENTAGE OF USED CARS SOLD ON INSTALMENT * ("A" REPRESENTS DEALERS IN HIGHEST PRICE-CLASS OF NEW CARS AND "E" THOSE IN THE LOWEST)

Price-Class	1926 (*First Half*)	1925	1924	1923	1922	1921	1920	1919
A.	50.9	44.6	46.1	39.1	25.5	28.8	26.4	17.1
B......	60.8	59.7	55.0	53.0	55.4	53.7	69.3†	43.6
C......	69.8	70.2	49.6	56.5	50.2	30.4	19.3	
D.......	69.6	69.0	66.9	78.7	77.3	77.0	70.6	56.0
E......	72.0	71.6	68.7	68.1	73.0	78.4	69.2	75.7

* Tables XLI to XLV on file with the General Motors Acceptance Corporation.

† The size of this percentage is probably due to an error in one dealer's figure, which, because of the small number of dealers reporting, influenced the percentage figure unduly.

The picture given in the above table is similar to that of the new-car experience of the dealer. The dealer in the high-priced car sells a smaller percentage of used cars on instalment than the dealer in the next lower price-class. This may be due to the fact that the dealer who sells the higher-priced new cars is called upon to accept, in part payment of the new cars, used cars in the same price-class, or in the class just below. When such a dealer effects the sale of a new car to a person who is already a car owner, the buyer probably offers as a trade-in a used car of a high or medium price-class. In other words, the dealer who sells new cars in a high price-class is likely to have used cars of a high price-class; and while a large percentage of these used cars are sold on instalment by the dealer, the percentage is lower in the high-priced than in the low-priced group. Apparently the buyers of the high-

priced used cars are more often able to pay cash or to borrow funds with which to pay for their purchases than are the buyers of the cheaper used cars.

A comparison of the percentages of used cars sold on instalment with those of new cars discloses that a larger percentage of the former are sold on time. The situation may be summarized in the statement that there is a higher percentage of used cars sold on instalment than there is of new cars, and that there is a higher percentage of the lower-priced cars, both old and new, sold on instalment than there is of the higher-priced cars. To put it another way, the buyers of the used cars and the buyers of the low-priced new cars are either less able or less willing to pay cash for their purchases than are the buyers of the new and higher-priced cars.

Relation of Instalment Sales of Used Cars to Geographical Areas

The indication that the territory in which the purchaser lives has some bearing on the method employed in his purchase was present in the returns as to used cars as well as in those relating to new cars. But here again there are so many considerations not covered by the returns which vitally affect the accuracy of such an assumption that no definite conclusion can be reached, and the point, while interesting, is not considered important enough to warrant the complete analysis of the entire merchandising field necessary in order accurately to establish it.

Terms of Sale on Used Cars

The desirable terms of sale on used cars have been established on a slightly more conservative basis than those on new cars, about 40 per cent down and ten monthly payments representing the average. Some exceptions involving longer terms are, however, made.

The percentage of used cars sold on terms longer than these has always been larger, sometimes several times larger, than the percentage of new cars sold on terms longer than the desired twelve months. What is the nature of the article sold? The price represents only a fractional part of that of the new car. Frequently, the maintenance cost is considerably higher than that of the new car. The body and parts are nearing the end of their terms of life, and when sold the tires and tubes are often near the replacement stage. The car purchaser may often find himself with a product for which he has paid the usual market price but which is high in maintenance expenses and sometimes so defective in its operation that additional outlays do not remedy the defects. A long credit period simply extends the period through which the defects and the maintenance expenses may disclose themselves. These factors are probably the explanation of most of those instances in which the cause of repossession is stated as "dissatisfaction with car," or "used car oversold."

In the cars of the lower price-classes, the used-car market is made up of the lower income-earning groups. The longer the terms granted, therefore, the greater is the possibility of some development involving the purchaser's ability to pay. Monthly periods of instalment payments also seem to have little justification in such sales when the buyer receives his wage bi-monthly or weekly. It is important in selling goods on instalment that the payments should have some direct relation to the time of receipt of the income of the purchaser, particularly in the lower income groups. But to arrange payments on a weekly or bi-monthly basis would increase the operating costs of finance companies and raise the cost to the purchaser. Every effort is made, however, to fit the payment dates to income dates, this being a factor in the transaction.

Since 1921 the percentage of used cars sold on terms of over ten months has undergone but little change, despite the fact that the problem of moving used cars has been a growing one from year to year. For the first six months of 1926, 36.6 per cent were sold on terms longer than ten months. This is a slightly higher percentage than was sold on such terms in recent years, from which we can at this time draw no definite conclusion because the first half of the year is the period in which the pressure upon the dealer to sell used cars for the summer season is greatest.

The following table shows the General Motors dealer position as reflected only by the returns received. As in the case of the new cars, attention is called to the fact that purchases are not made simply on the so-called desirable terms or longer, since many purchasers pay for their cars in less than ten months. While no figures as to the number of sales on terms under ten months were secured, in the experience of General Motors Acceptance Corporation these sales, as in the case of new cars, practically offset the longer term transactions, resulting in the ten months' desirable average.

TABLE VIII

PERCENTAGE OF USED CARS SOLD ON TERMS OF OVER 10 MONTHS* (NOT NECESSARILY GENERAL MOTORS CARS ALTHOUGH SOLD BY GENERAL MOTORS DEALERS)

	1926	1925	1924	1923	1922	1921	1920	1919
Number sold on instalment	49,521	40,548	21,006	11,894	4,887	2,115	2,418	906
Number sold on terms of over 10 mos.	18,135	13,565	7,363	4,227	1,817	784	309	217
Percentage sold on terms of over 10 mos.	36.6	33.5	35.1	35.6	37.2	37.1	12.8	23.9

* Table XL on file with General Motors Acceptance Corporation.

It will be seen from the above figures that, in 1926,

one used car out of approximately every 2.7 used cars was sold on terms longer than ten months. This averages 14 cars per dealer sold under these conditions out of an average of 60 used cars sold per dealer, of which 39 per dealer were sold on instalment. Over the period from 1921–1926, the percentage sold on terms of over ten months has undergone but little change. Two forces have been influencing this situation: on the one hand, competition has tended to lengthen the terms; while, on the other hand, there has been pressure exerted along the line which tended to fix the ten-month limit.

Used-Car Allowances

In this study, it was necessary to select one car in the General Motors line, because the records for that car were the most complete and probably the most accurate. It was found that there is a wide divergence in the used-car allowances made by the General Motors dealers. It is quite evident that there is no used-car market, but rather that there are a great number of used-car markets. It is shown by the following figures that the allowance made on used cars accepted in trade by this group of dealers varies from an average of $535 in the Denver area to $381 in the Cincinnati area.

These differences in the used-car allowances on cars offered as trade-ins on new cars immediately raise a series of questions as to their causes. Is the particular car being sold in some areas to a greater extent on its merits than in others, and is this fact of greater weight than the size of the used-car allowance made by the dealers? Are the buyers in some areas offering as trade-ins higher priced cars, or are they buying new cars more frequently and offering as trade-ins cars which are later models? Are dealers in some areas meeting so much less competition of cars in this price-class that they can afford to offer lower prices on used cars? Is the ratio of

TABLE IX

AVERAGE TRADE-IN ALLOWANCE AND LOSS ON USED CARS BASED ON RETURNS MADE BY SELECTED GROUP OF DEALERS,* 1926 (FIRST HALF)

Area	Number of Dealers Reporting	Average Trade-In Allowance	Average Loss Per Used Car Sold
Atlanta	10	$383	$14
Buffalo	27	459	28
Chicago	120	438	36
Cincinnati	19	381	22
Cleveland	14	429	51
Dallas	23	439	12
Denver	22	535	14
Detroit	33	510	55
Indianapolis	51	388	28
Kansas City	9	428	59
Los Angeles	9	454	29
Memphis	7	425	27
Milwaukee	21	424	20
New York	8	440	19
Oklahoma City	51	480	40
Philadelphia	17	502	41
Pittsburgh	18	438	31
St. Louis	4	434	52
San Francisco	26	407	19
Washington	9	519	59

* Tables XLVI to CXXXVI on file with the General Motors Acceptance Corporation.

car owners to non-car owners so much smaller in some areas that the number of cars offered as trade-ins is so restricted as to enable the dealer to make a large allowance, with the expectation that he can resell at a high price? Although our information does not make it possible to answer these questions, the points raised indicate a line along which further study might be made.

No accurate deductions can be made from the relationship of the average loss per used car and the average trade-in allowance, since the used-car loss figure will be influenced by whether the dealers charge a part of the overhead to the used car, and whether they charge the

cost of reconditioning and selling against the used car. Some dealers, apparently, do not even charge these latter items. It will be noted that the Denver, Detroit and Washington areas made the highest average used-car allowances, and Cincinnati, Atlanta and Indianapolis the lowest allowances. With the exception of Denver, which seems to occupy a rather unique position, these cities at the extremes of the allowances also took the high and low losses per used car. Denver's position is peculiar in that the average allowance is the highest in the list of cities, but the average loss per car is as low as the lowest, \$14; whereas the average allowance in Atlanta is next to the lowest, but the loss per used car was also \$14.

What has been the effect of the used-car situation upon repossessions of used cars? What has been the general effect upon dealer profits?

Repossession by Dealers

The dealers who reported on the repossessions of used cars are the ones who also reported on the new-car repossessions. The number of used cars sold on instalment and repossessed by the dealer is quite in contrast to the number of new cars sold and repossessed. From the general trend of the comments of dealers on their repossession experience, it appears that they are more concerned about the used-car problem than about the repossessions of new cars. The general impression given by the dealer is that he frequently sustains no losses on new cars taken back and that in many instances he makes a profit upon them. Part of the picture is disclosed in Table X.

From the dealer replies on the causes of repossession, it is evident that, while the amount of money which the purchaser requires for a used car is relatively small, the people who make such purchases are often in a dif-

TABLE X

AVERAGE NUMBER OF REPOSSESSIONS OF USED CARS PER REPORTING DEALER*

	1926 (*First Half*)	1925	1924	1923	1922	1921
All G. M. lines.....	5.02	7.20	5.56	4 21	5.76	3.76

* See Tables CXXXVII-A to CXLI on file with the General Motors Acceptance Corporation.

ferent economic and social class from those who purchase new cars. Sickness and loss of employment appear repeatedly in the list of causes for these repossessions. The dealer frequently reports that he has "oversold" the car and less frequently states that the buyer was dissatisfied. Overselling on the part of the seller is almost certain to result in dissatisfaction on the part of the buyer. Most purchasers of automobiles know little of the mechanical structure of an automobile. In the purchase of a new car, the necessity of the manufacturer's producing a good mechanism protects the buyer; but in the purchase of a used car the buyer has no such protection. If a dealer has repossessed a car, his chief interest is to sell it, at a profit if possible; and in his used-car sales he is constantly induced to sell a car for more than he considers it is worth, since he has often allowed more than his estimate of its real value when he accepted it in trade.

Unlike the repossessions of new cars, it seems that a larger part of the burden of used-car repossessions is borne by the dealer. The number of used cars repossessed has averaged 5.6 per dealer since 1921, reaching a high point of 7.2 in 1925 and a low point of 4.2 in 1923. It is true, indeed, that the repossessions of cars in any one year do not bear a direct relation to the cars sold in that year, since many of the cars repossessed may have been

sold in the preceding year. But the relationship between those sold and those repossessed in any one year reflects to some extent the degree of success of the dealer operations for the year. Is this larger percentage of repossessions of used cars an outgrowth of the fact that the dealer finances more of his used cars than of his new ones? Does he take chances rather than make a credit analysis? Apparently the dealer is financing more of the used cars than of the new cars through his own resources. An estimate of the number of new and used cars financed given by *Automotive Industries* places the figures at 2,260,000 new cars in 1924 and 3,150,000 new cars in 1925; 1,850,000 used cars in 1924 and 2,600,000 used cars in 1925. The General Motors dealers' returns indicate that they sold 1.2 used cars on instalment to each new car they sold on time in 1925, and 1.03 used cars to each new car sold on time in 1924. There is no information at hand to indicate the method used by *Automotive Industries* in reaching its estimates. If the estimate of new cars sold is the result of taking the total number sold in each year and then accepting the usual estimate of 75 per cent of that total as sold on instalment, the *Automotive Industries'* figure is probably too high. General Motors dealers' records and the Dodge Brothers' investigation place the figure at nearer 55 per cent.

The percentage of the dealers' repossessions of used cars is several times as large as that of their repossessions of new cars. If the finance company experience on the repossession of used cars is similar to the dealer experience, the losses sustained upon this business must be large. Some of the finance companies are financing used cars entirely; most of them are probably financing both new and used cars. One finance company reports as high as one-sixth of its used cars repossessed; and, judging from such returns as have been received from these companies, it is usual for them to repossess more of the

used cars sold than of the new cars. It is quite evident that both the dealers and the finance companies find a more difficult situation in the financing of used cars on terms than in the financing of new ones.

Profits and Losses

The dealer losses on used-car operations are given below:

TABLE XI

LOSS PER USED CAR SOLD*

	1926 (*First Half*)	1925	1924	1923	1922	1921	1920	1919
Cars of all makes	$24	$28	$26	$43	$48	$65	$22	$19

* Tables XL to XLV on file with the General Motors Acceptance Corporation.

TABLE XII

AVERAGE TOTAL LOSSES PER DEALER ON USED CARS*

	1926 (*First Half*)	1925	1924	1923	1922	1921	1920	1919
All G. M. dealers who reported..	$1,440	$2,604	$2,080	$3,569	$2,928	$2,405	$1,078	$608

* These figures were obtained by multiplying the average number of used cars sold per dealer by the average loss per used car sold as shown in Table XI.

The actual losses may be higher than those indicated. Many of the dealers do not keep individual car records on the cost of reconditioning the used cars accepted as trade-ins; and it seems that relatively few apportion any of the overhead and selling expenses to these cars. From the point of view of the number of cars handled, the

used-car business is almost 50 per cent of the total business of the automobile dealer; yet this part of the business, in the case of many dealers, carries none of the burden. Furthermore, the repossession expenses of the dealer are largely an outgrowth of the sale of used cars on instalment, yet these expenses are probably hidden in the dealer's general accounts.

Dealer Reactions to the Used-Car Situation

Apparently the dealers feel quite concerned about the used-car situation. Although it seems to be one of the biggest problems they face, they have no definite solution for it. Most of them made no attempt to offer suggestions as to possible remedies, and it is questionable whether any of the suggestions made would materially help the situation. What seems to be an outstanding element in the situation is expressed by one dealer as follows: "Some dealers figure on making just about so much on a new-car sale and are willing to take a loss of part of their commission on the used car. Couple that with a miscue on the condition of the used car or its value and they have no profit at all." Some claim the situation is aggravated by the fact that certain manufacturers, in their desire to produce and sell new cars, have forced new cars upon dealers. In these circumstances, the dealers take used cars in a condition and at prices which are not warranted, in order to effect the sale of new cars. If a high allowance is not made, the prospective car buyer goes to a competitor, who will offer a greater allowance. The result is that the dealers representing manufacturers who do not follow a forcing policy often think it necessary to make liberal allowances on used cars in order to sell new ones.[1]

[1] Attention is called to the fact that this represents a point of view expressed by individual dealers. Attention is further called to a previous footnote to the effect that many dealers complain of inability to obtain cars rapidly enough to meet their sales.

The most common suggestion coming from the dealer is that the manufacturer should grant larger discounts, or, what amounts to very much the same thing, should give the dealer a trade-in allowance. This, of course, is not a solution of the problem. It simply means that the dealer will be in a position to accept more used cars or to allow larger amounts than he now does. This shifts part of the burden to the manufacturer, since the larger amount allowed to the dealer means a smaller return to the manufacturer.

Another common suggestion is that the worst of the used cars accepted as trade-ins be "junked." This immediately raises many questions. The plan, however, is being experimented with and may result in a partial solution of the problem.

Some dealers suggest local appraisers for local dealers; others, factory appraisers and factory valuations. Even if an organization of dealers to maintain used-car prices as established by a local appraiser were legal, would it be effective, if operated within a narrow local area; and would it be workable if operated over a larger area? If too narrow an area were used, the owner might well drive out of the area and sell in another; if too wide an area were used, the dealers themselves might not hold together. If a factory list price on used cars were to be established or a factory appraiser were to dictate used-car prices, provision would need to be made for local differences in the condition of the used-car markets. A used car would not necessarily be worth the same amount in New York as in Boston, and the price in Portland, Maine, might differ from that in Boston.

Some of the dealer remedies are worth noting, if for no other reason than to show how far apart the dealers are on solutions. Some would eliminate trade-ins entirely, but they evidently fail to see the necessity of all manufacturers making the same requirement at the same

time. Others would have the manufacturers unite to make the same requirement at the same time. Others would have the manufacturers require that the dealers show a certain percentage of profit on their used-car operations. For a single manufacturer to do this, however, would be to put his dealers at a disadvantage. One dealer would lower the discounts and eliminate trading allowances; but he recognizes the need of concerted action on the part of all the manufacturers to make this effective.

It is of considerable interest to note the comments of dealers on the used-car problem in the light of their experience.

CASE 1

"Have been very fortunate. No comment." This dealer's record is shown below:

	1926 (*First Half*)	1925	1924
Number of new cars sold	10	17	16
Used-car losses	$225	$415	$543
Losses on used-car business as deductions from profits on each new car	$ 25	$ 24	$ 34

Here is a dealer who accepts his losses on used cars and evidently considers them a part of his costs of doing business.

CASE 2

"Dealers' margin of profit is too small. There are few small dealers able to make any money and get it in the bank and a general business depression or panic will break half of them."

	1926 (*First Half*)	1925
Number of new cars sold	84	99
Used-car losses	$3,080	$3,750
Losses on used-car business as deductions from profits on each new car	$ 37	$ 38

CASE 3

"*There is no used-car problem*, it is purely a problem of new-car merchandising. Time, with the combined effort of factory and dealer on better merchandising methods, is the only thing that *will solve our problem.*"

In the period extending from January 1, 1925, to the end of June, 1926, this dealer sustained losses of $7,064 on used cars and sold 106 new cars, making the deduction from the profits on each new car $66.

CASE 4

"We wish we had a practical suggestion to submit. However, believe it to be a merchandising problem of buying and selling. Our losses are sufficient to warrant any suggestions that appear practical."

The losses sustained in the period extending from January 1, 1925, to the end of June, 1926, were $1,780 and 30 new cars were sold, making the deduction from the profits on each new car $59.

There appears to be but one conclusion from this study of the dealer and of the used-car situation. Dealers are able to sell large numbers of new cars. From the discount allowed by the manufacturer, however, the dealer must pay the expenses of his business; and while

this might still give him a reasonable return, he can not cut into it indefinitely in order to sustain his losses on used cars. One of his difficulties may be that his used-car losses are actually higher than his records show, and that frequently he has no net return. That many do not know their used-car status is certain. Under the conditions, a strong dealer organization can only be built up with difficulty, unless, perhaps, some particular car stands out far above all others as the best in its price-class and the buying public accepts it as such. Instalment selling is not the cause of the condition of the used-car market, but it is possible that it has considerably aggravated the condition because it has increased the extent of the problem.

Section Four

GENERAL STATUS OF THE DEALER

Relation of New-Car to Used-Car Business, 1919, to June, 1926
Relation of Used-Car Allowance to New-Car Prices
Dealers' Methods of Financing the Retail Sale of Passenger Cars
Dealer Repossessions of Passenger Cars
Stability of the Dealer Organization

The Relation of New-Car to Used-Car Business: 1919—June, 1926

The following summary shows the relation of used cars sold to the new-car sales of the General Motors lines:

TABLE XIII

PERCENTAGE OF THE TOTAL NUMBER OF CARS SOLD REPRESENTED BY USED-CAR SALES

1926	1925	1924	1923	1922	1921	1920	1919
47.2	49 7	47.7	40.6	40.8	41.3	46.1	37.0

TABLE XIV

PERCENTAGE OF CARS SOLD ON INSTALMENT

	1926	1925	1924	1923	1922	1921	1920	1919
New cars........	55.9	52.0	50 7	45.8	37.1	33.7	29.2	32.6
Used cars........	65.2	62 8	57.4	54.8	51.6	50.7	63.6	44.5

It will be seen from the above that, in 1919, the dealer sold about one used car to every 1.7 new cars; and that, with the exception of 1920, he sold about 1 used car to

1.5 new cars through 1923. From 1924 to the end of June, 1926, the dealer has sold approximately one used car for each new car sold. The relationship of instalment sales to cash sales is very much the same. During the period 1919 to 1922, the average instalment sales of new cars were approximately one instalment sale to two cash sales; and about one instalment to one cash sale of used cars. In the period 1923 to 1926, the instalment sales of new cars rose from 45.8 per cent to 55.9 per cent and of used cars from 54.8 per cent to 65.2 per cent. From the point of view of numbers, while the percentage of both new and used cars sold on instalment has increased, the increase has been more marked in the case of used cars than in the case of new cars.

Relation of Used-Car Allowance to New-Car Prices

The following table indicates that some changes have taken place in the percentage of the price of the new car which is paid by the allowance on the used car.

TABLE XV

PERCENTAGE OF NEW-CAR PRICE REPRESENTED BY USED-CAR ALLOWANCE*

	1926 (*First Half*)	1925	1924	1923	1922	1921	1920	1919
Composite delivered price......	$1,019	$1,071	$1,159	$1,051	$1,193	$1,573	$1,733	$1,500
Average percentage represented by used-car allowance.......	29.7	30.1	29.4	31.4	31.3	37.4	33.3	34.0

It will be noted from the above table that the period under consideration represents a period of declining new-car prices. When the composite figures are taken, the percentage of the new-car price allowed on used cars

accepted in trade has undergone but little change since 1922, but an analysis of the individual cars discloses changes during the period. It was expected that cars in the higher price-classes would show a smaller percentage of the new-car price represented by the used-car allowances, since during the period there has probably been a very large number of persons trading in cars of the lower price-classes for those of the higher price-classes and the percentage of the new-car price represented by the used-car allowance is consequently smaller than when a car of particular price-class is turned in for another of the same price-class. Other factors, of course, enter into the situation; for if a particular car has become established in the public mind as giving most for the money, the dealers will probably not feel pressed to make large allowances on used cars in order to sell the new ones. These are but two of several factors which have probably been influencing the above figures.

Whatever the individual lines may show or individual dealers may do, the dealers as a whole have been allowing on the used cars less than a third of the price of the new ones sold. In financing the sale of the new cars, therefore, the buyer is being called upon to make a part payment in cash in addition to the used-car allowance.

Dealers' Methods of Financing the Retail Sale of Passenger Cars

Before the advent of finance companies, it seems to have been a common practice for the dealer to carry the customer with his own resources, to borrow at the bank for the purpose, or to discount the paper of his customer at the local bank. It appears to be the consensus of opinion, however, that the dealer was not called upon to do this to any important extent, since sales volume was

not so high and the instalment plan did not become common until the post-war period. We have learned in the text of Volume One that a controversy has existed over whether the dealer should use recourse, or non-recourse finance companies. The dealers, in their replies to the question on the methods used, seem to indicate that they use whichever suits their purpose, some using one method and others using several. The following summary is based upon their replies:

Number of dealers replying [1]	1,254
Number using non-recourse	284
Number using recourse	990
Number using repurchase agreement	187
Number discounting customer paper at local banks	430
Number borrowing from local banks on own notes	330
Number financing retail sales with own capital	58

[1] A great many dealers who gave information on the method of financing sales either would not or could not give any information on the repossession of cars.

In other words, many dealers were using two or more methods of financing; some were using all six methods and finding circumstances in which some one of the six was more satisfactory than the other five. It should be noted, however, that in all methods enumerated, with the exception of the first, the dealer carries the responsibility, which in effect is the same as the recourse method.

Dealer Repossessions of Passenger Cars

Probably few, if any, dealers keep records to show the total number of cars, segregated as to new and used, financed through discounting their customers' notes at the bank, through the dealers directly, and through recourse finance companies. In all of these cases, the burden of repossession rests upon the dealer. His repossession status is shown in the following table.

TABLE XVI

RELATION OF REPOSSESSIONS TO CARS SOLD ON INSTALMENT

	1926 (*First Half*)	1925	1924	1923	1922	1921	1920	1919
Average number of new cars, per dealer, repossessed *	.98	1.24	1.25	84	33	.76	4.91	.83
Average number of used cars, per dealer, repossessed *	5.02	7.20	5.56	4.21	5.76	3.76	8.42	2.17
Ratio of new-car to used-car repossessions by dealer	1 to 5.1	1 to 5.8	1 to 4.4	1 to 5	1 to 17 5	1 to 4.9	1 to 1.7	1 to 2.6

* Number of cars repossessed divided by the number of dealers reporting repossessions. The dealers reporting sales did not always report repossession history.

It is evident that the repossession burden assumed by the dealer is much greater in the used-car than in the new-car field. While some dealers have made profits on their repossession operations, at least according to their own records, the net result of these operations for all General Motors dealers who reported has been that they have, on the average, taken a loss in every year, as is shown by the following figures, although in some instances an individual line has netted a profit.

TABLE XVII

AVERAGE TOTAL LOSS PER DEALER REPORTING ON REPOSSESSION*

	1926 (*First Half*)	1925	1924	1923	1922	1921
All G. M. dealers	$168	$294	$211	$179	$434	$325

* Tables CXXXVII-A to CXLI on file with the General Motors Acceptance Corporation.

TABLE XVIII

AVERAGE AMOUNT PAID BY BUYERS ON CARS BEFORE REPOSSESSION BY THE DEALER*

	1926 (*First Half*)	1925	1924	1923
New car buyers	$549	$649	$588	$690
Used-car buyers	$167	$197	$240	$263

* Tables CXXXVII-A to CLXI on file with the General Motors Acceptance Corporation.

The final result of repossessions is usually a loss to both the dealer and the original purchaser. The dealer returns do not segregate the new and used cars as to profits and losses; but the dealers imply that their repossessions of new cars are not burdensome. The conclusion must be that the losses are sustained upon the instalment sales of used cars, there being about five times as many repossessions in the case of used cars as in the case of new cars. The car buyers apparently take large losses because of their failure to complete payments upon new cars. In the first half of 1926, new-car buyers whose cars were repossessed suffered an average loss of $549. In that half year, 585 dealers reported repossessions of 571 new cars upon which the original purchasers had paid in $313,672. In 1925, there were 399 repossessions of new cars by 322 dealers reporting, upon which the original purchasers had paid $259,120, or an average loss per buyer of $649. While a large part of these payments by original purchasers consists of used-car allowances applied upon the purchase of new cars, the losses sustained by new-car buyers must be, in the aggregate, of considerable size. In the first half of 1926, the same dealers reported 2,936 used cars repossessed upon which the buyers had paid $490,524; and in 1925 the reporting dealers repossessed 2,320 used cars upon which the

original buyers had paid $456,034. This made an average loss per used-car buyer whose car was repossessed of $167 in the first half of 1926 and $197 in the year 1925, most of which represents cash losses.[1] The dealer, however, has also taken a loss, the beneficiary apparently being the original buyer, who has used up more of the car than he has paid for, or the subsequent purchaser of the repossessed car who may have obtained the repossessed car at a low price because of the dealer's desire to liquidate the transaction.

The analysis of the dealers' figures on repossessions of both new and used cars seems to indicate that the dealers in general have not been called upon to assume a very heavy burden in repossessing cars. The car buyers may have taken sizeable losses and the finance companies may have suffered similarly; but up to the present the dealer has been in a very good condition. His repossession problem appears to be much less significant than his problems relative to trade-in allowances and the selling prices of used cars.

In reply to the question on the causes of repossessions, most of the dealers stated the causes in a word or two; others went into more detail. The dealers' replies are summarized on the next page.

Many of the causes given could probably be grouped under "careless credit granting." Some of those included in "loss of position" would come under the heading of "careless credit granting," inasmuch as one of the factors to be taken into consideration in the analysis of personal credit is the factor of stability of employment. Some of those in the group "customer unable to pay" belong in the same category. "Insufficient down payment" and "time too long" constitute admissions on the part of the dealers that they have

[1] The payments of buyers can not be considered as total losses to them, since they had the use of the cars until they were repossessed by the dealers.

gone beyond the limits of safety. Careful credit analysis would probably have reduced the number repossessed because of "dishonesty" and because of the buyer "leaving the county or state." Those listed as "insufficient salary," "buyer could not afford," and "too many obligations" are largely avoidable losses, if the dealer knows how, and if he is willing, to make a credit analysis and to follow the usual procedure. To a very large extent, these points are determinable before the sale. The tendency to "take a chance" is a pronounced one in the used-car field, and the new-car sales are not entirely free from it.

Total number of dealers reporting causes of repossessions	404
Total number of new cars repossessed by these dealers	1,559
Total number of used cars repossessed by these dealers	6,549

Causes of Repossessions	Number Repossessed
1. Loss of position	134
2. Customer unable to pay	96
3. Insufficient down payment	77
4. Careless credit granting	63
5. Crop and business failures, falling prices	42
6. Sickness	37
7. Car wrecks	31
8. Overselling	30
9. Dishonesty	19
10. Buyer could not afford	19
11. Dissatisfaction with car	16
12. Left county or state	14
13. Florida situation [1]	12
14. Refused to pay	9
15. Car sold too high	7
16. Time too long	6
17. Violation of Volstead Act	5
18. Bank failures	3
19. Too many obligations	2
20. Miscellaneous [2]	25

[1] I.e., the havoc wrought by the tornadoes and the collapse of the boom in Florida real estate.

[2] Includes such things as poor follow-up of collections, decline in new-car price, abandonment.

Many cases of "loss of position," all of the cases of "sickness" and perhaps "car wrecks," and those which are an outgrowth of crop and business failures are causes which can not be foreseen, and the finance companies and dealers can not be held responsible for these. But when the dealer admits that he has sold the car at too high a price or that he has oversold it, or, worse still, that the car should have been "junked," then the dealer is receiving his return for questionable business practice when he is asked to repossess the car and is compelled to take a loss upon it. One dealer who repossessed a used car because the buyer refused to pay did not resell the car but took a loss and junked it. Apparently it should not have been sold in the first place.

While the result of the repossessions is usually a net loss to the dealer, there are probably many instances in which the dealer makes a profit on an individual transaction in which the burden is assumed by the car buyer, who has been unable to pay because of loss of position, sickness, crop or business failures, or because of the questionable cleverness of the dealer who has oversold the car.

It may be said that, in the general dealer situation, there are usually about five used-car repossessions to one new-car repossession.

What some dealers will do in order to dispose of a used car, and what the conditions are under which they operate, are disclosed in quotations from their letters as shown in the following cases.[1]

CASE I

"Competition forces us to sell cars lower than 40 per cent down. If man's work gets slack, he turns car in or

[1] While the comments of dealers are given with reference to both used-car and new-car experience, their chief difficulty is in the used-car field.

else you have to repossess if you want anything left in car, as he has not enough in car to care whether he loses it or not.

CASE 2

"All cars we repossessed were old cars that we sold for a small down payment, mostly to buyers that had no business buying a car."

CASE 3

This is an analysis of three used cars repossessed in 1926.

(1) "Buyer was sold car above his ability to pay."

(2) "Car over-priced when sold."

(3) "Car not put in satisfactory mechanical condition before sale."

CASE 4

"As you will note, the year of 1920 was the bad year for us in the automobile business and there were several causes for the disaster.

First, new car was selling for______. It has always been customary to carry something like half if necessary on new cars, and during this year the price of the new car was reduced to something over______, and where dealer was carrying from______to______on a new car, value of the car during fall was not over half what was against.

In addition to this, this was the year of the general depression, and locally the weevils destroyed the cotton, and the price of cotton broke away to nothing, and with those conditions we actually had to carry some of these old cars over two or three years and realized practically nothing out of lots of them. The same, of course, was true with used cars, hence our big loss."

CASE 5

"Price of cotton making it impossible for owners to make payments." (1926 report)

CASE 6

"Farmers made a complete failure on account of cotton prices." (1926 report)

CASE 7

"Used cars sold too high, overtrading due to competition. (40 per cent of firms have changed hands here during the past year.) Seasonal labor lay-off in oil fields and last year's poor crop conditions. Price cuts and reduction of initial payments on some cheap new cars. Drifting of purchasers to other points and inability to stay in touch with them."

CASE 8

"We depend entirely on the coal miners for our business. The greatest cause for repossessions in 1923 and 1924 was strikes between the coal miners and the companies. The cause of practically all our other repossessions are the coal mines running good for a while, then shutting down and laying off many miners."

CASE 9

"After dealer holds car for sixty or ninety days he is so anxious to sell that he does not get enough cash down."

CASE 10

"Crop failures, 1922. Bank failures, 1923."

CASE 11

"Usually car wreck not covered by insurance to purchaser. Off brand or orphan car."

CASE 12

"Anticipated reduction in used-car values not near what actual reduction was. Down payment less than one-third and contract either for longer than one year or with tail-end pay. In general customers who can not pay regular terms are careless about keeping car in repair or good condition otherwise and depreciation is a great deal more rapid than the average."

CASE 13

"Overestimate of buyer's ability to pay, either on part of seller or buyer." "Overbuying on part of customer and instability of his income."

CASE 14

"The greatest cause of repossessions is an insufficient down payment."

CASE 15

"Disappointment in price and production of cotton."

CASE 16

"Repossessions are very small in number in this section."

CASE 17

"Majority of these cars were sold to miners, and the repossessions were caused by mines shutting down. When the mines are operating, we do not have any trouble with repossessions." (1926 report, all used cars.)

CASE 18

"Too anxious to get rid of used car."

CASE 19

"Most used cars are sold to oil field workers, who will pay as long as they have work."

CASE 20

"Crop failures or low price crops. Taking cars to make sales at competitors' prices that have long discounts and giving longer trade-in."

CASE 21

"Failure of insurance company to furnish customer with new car after near complete wreck. Car afterward repaired and resold with $75.00 gain not including original commissions.

"Failure of customer to meet obligations; car bought in partnership. Disagreement of partners involved, neither of which would assume obligations."

CASE 22

"Most repossessions are made on low-priced used cars sold too high and to poor risks. Very few new cars are repossessed and in most cases where there is need for repossession the car was sold to someone that should never have been sold. However, there are exceptions to all cases and occasionally a deal that was A–1 at first fails to mature properly."

CASE 23

"Repossession of used car due to over-selling resulting from too large trade-in allowance."

CASE 24

"Believe that if the car was sold at the right price fewer of them would come back."

CASE 25

"A great majority of our new-car repossessions in 1925 caused by radical change over 1924 models."

The above comments of dealers contain many things that probably are not new, some of which have been noted in other connections. Others are worth further attention. To what extent the dealer feels a pressure to "anticipate reductions in used-car values" as outlined in Case 12, it is impossible to say; but such action would seem to add to a recognized loss which the dealer expects to take a speculative feature which may put him in a bad position. Case 25 explains the repossessions of new cars as due to the radical changes in the newer models. The burden is laid, not upon price changes, but upon car changes, which, of course, represents another side of the evolution of the industry.[1]

Stability of the Dealer Organization

The dealer organization is a very fluid one, its turn-over apparently being high. A rapidly expanding organization would, of course, show this condition, which does not reflect turn-over entirely, but both turn-over and expansion.

Figures obtained from *Automotive Industries* estimate an increase in the number of "car dealers" between 1920 and 1926 of about 50 per cent, or from 32,245 in 1920 to 48,544 in the first half of 1926. This latter figure, ac-

[1] Many of the dealers whose opinions or experiences are given have found it necessary to repossess but few cars, and their comments are based upon such repossessions as they have had. Others are referring to post-war deflation repossessions. Most of the returns contained no comments on causes, and many dealers had few or no repossessions.

cording to the sources used, represents the largest number of dealers in the history of the business. The percentage of turn-over increased from 1920 to 1923, but has been declining since, reaching a minimum of 11 per cent in 1925. This is the lowest of any year on record. These turn-over figures do not represent failures, although the failures are included in the total. They are derived from a directory of dealers and represent those who were operating under a particular name in one year, but who were not in existence under that name the following year. While a few of these may have changed their names, their number is undoubtedly insignificant, and the changes may be considered as indicating those who were in business one year and had gone out of business in the following year.

R. G. Dun and Company have furnished the number of automobile dealer failures from the year 1920 to the end of 1925 as contained in the following table.

TABLE XIX

RELATION OF DEALER TURN-OVER TO GENERAL BUSINESS FAILURES

	1925	1924	1923	1922	1921	1920
Number of car dealers	48,151	48,216	38,392	35,337	35,373	32,245
Percentage of turn-over	11	21	26	25	21	13
Percentage of dealer failures	.49	.51	.61	1.03	.93	.48
Percentage of failures—all businesses	1.05	1.01	.94	1.19	1.02	.49

If we take the number of car dealers given by *Automotive Industries* and determine what percentage of these figures is represented by the Dun failures, it will be seen that in only one year, 1920, did the percentage of automobile dealer failures equal the average percentage of failures for all lines. While the failures ran very close to the average of all lines between 1921 and 1923,

in the year 1924–1925 the percentage of failures was about half that of the general average. These two years stand out as exceptional years for the dealers, at least as disclosed by the figures available to us. When one considers the percentage of failures as compared with the total number of dealers in the business, one sees that the dealer has been in a position that is at least as good as that of the average business man. This conclusion strengthens the one reached in the section on bank experience. The high percentage of turn-over has been due, not to failures, but to some other conditions within the trade.

SECTION FIVE

CONCLUSIONS

The dealer study, as here presented, discloses several well marked conditions in the present system of selling automobiles on instalment credit.

First: The number of dealer failures is no larger, and the turn-over is less, than in many other lines.

Second: Bankers who have had experience in the financing of dealers are of the opinion that the automobile dealer is as good a credit risk as the average business man.

Third: A considerable part of the financing of retail sales of automobiles is borne by local banks rather than by finance companies. This financing takes place through the dealer's borrowing from the local bank on his own note or discounting the notes of his customers. In general, however, the financing of sales has moved from the dealer and the bank to the finance company.

Fourth: The chief cause of dealers' failures is the large allowances which are made on used cars. This study shows that these allowances result in losses to the dealers. Such losses are usually understated because the records kept by dealers are frequently inadequate. In this connection, it may be noted that the margin between the used-car allowance and the new-car price has fluctuated somewhat with the downward trend of prices. Dealers are taking some losses on used cars in order to sell new ones and are using the old-car allowance, at times, as a competitive device. While there would be a used-car problem without instalment selling, this method of selling cars has increased the importance of the problem.

Fifth: The instalment selling of automobiles is influ-

enced by the price-class of the cars sold and by the geographical position of both the buyer and the seller.

Sixth: Our returns for 1925 showed that 52 per cent of the new cars and 62.8 per cent of the used cars were sold on instalment, and that to the end of June, 1926, 55.9 per cent of the new, and 65.2 per cent of the used, cars were sold on instalment; and that the combined percentage for new and used cars for the two periods was 59 per cent, as previously stated on page 403. This is a considerably smaller percentage than the figure of 75 per cent usually quoted.

APPENDIX SIX

THE REPOSSESSION STUDY

Under the Direction of

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TABLE OF CONTENTS

CHARTS

THE REPOSSESSION STUDY

INTRODUCTION

THE purpose of this study is to analyze certain aspects of the experience of the General Motors Acceptance Corporation for the purpose of securing knowledge pertinent to the subject of instalment selling. In this connection, facts relating to repossession are probably the least familiar, and are, for this reason, of much interest. They accordingly occupy the forefront of the following discussion.

We may consider the repossession of a car as the crystallization of some untoward circumstance, such as dissatisfaction or inability to pay, or both, which it would be desirable to prevent. Aside from the apparent evil in connection with the loss to the last user, the repossessed car affects the entire automobile industry. This has caused trouble in connection with the used-car situation in some instances. It has engendered economic loss, due to the expenses of repossessing, reselling, and even actual scrapping of cars.[1] Certain abuses of instalment selling which affect the entire industry may thus be seen to lie at the root of the repossession of cars.

Aside from this connection with the situation in the automobile industry as a whole, what we are primarily interested in at present is the problem of the purchaser himself. While total repossessions may not by any means be considered as synonymous with total misfits,

[1] This situation is being intensified still more today, perhaps, by the "trade-in" situation, which presents a serious problem, especially to the dealer. The effort on the part of the General Motors Acceptance Corporation to meet this situation, and the attention which, it is understood, other companies are giving to the dealer problem, suggest that its seriousness is being recognized.

it may, nevertheless, be assumed that factors affecting these misfits, where the car is finally repossessed, may be considered as identical with those affecting other misfits leading to dissatisfaction, if not to repossession. Accordingly, if any suggestion of causes leading to repossessions can be obtained, some light will be thrown upon the nature of the cause of the dissatisfaction which is charged against instalment selling in general.

It may be noted that, in many cases, the development that is objectionable from the standpoint of the purchaser gives rise to a result that is objectionable to the finance company. It is not surprising that the practices from which there arise evils to the individual purchaser appear to be identical with those which the finance company is attempting to avoid. It is to the interest of both seller and buyer that the purchaser should not buy beyond his ability. In many cases, it may be necessary to the collection of payments that satisfaction be felt on the part of the purchaser, so that the interest of seller and buyer are identical in this matter as well. It therefore appears probable that the self-interest of the seller may tend to prevent overbuying and the resulting dissatisfaction among customers. The relative importance of some of the factors involved is considered in the following discussion.

THE CAUSES OF REPOSSESSIONS

1. *Breach of faith*
2. *Overestimation of the ability of the purchaser to pay*
3. *Failure properly to appraise the place of the motor car in the economy of the individual*
4. *Unforeseen changes in the ability of the purchaser to pay*
5. *Changes in the wants of the consumer*
6. *The upkeep of the car is greater than was anticipated*
7. *Value of the car not equal to the remaining payments*
8. *Other factors*

What effect does the general state of business have upon laxity in extending credit and thus upon the sound-

ness of the paper bought? Do good times and spring optimism cause the dealer to grant terms to those who should not be the recipients of credit? Is the purchaser encouraged to make promises which he can not meet, or will not want to meet? These are questions which reach to the heart of the difficulties in instalment selling; but they are questions which are difficult to answer. Tentative conclusions may, however, be drawn from an examination of the record of those whose cars have been repossessed.[1]

Obviously several factors contribute to repossessions. Just what each contributes might conceivably be determined by a canvass of individuals whose cars have been repossessed. In default of such an investigation, the analysis must consist of an interpretation of the existing repossession figures, in the light of certain assumptions as to the manner in which the passage of time affects the importance of the various factors. Let us, therefore, consider each of these factors from this point of view.

1. Breach of Faith on the Part of the Purchaser, i.e., Buying with no Intention of Meeting the Balance of Payments

This undoubtedly exists, but presumably only to a small extent. With high down payments, the incentive for such action is not great. There is little basis for concluding that repossessions from this cause are greater at one time than at another.

2. Overestimation of the Ability of the Purchaser to Pay

The dealer, or the credit man, exercises a check on the extension of credit. The purchaser may overestimate

[1]A sample of about two thousand of the form on which the General Motors Acceptance Corporation keeps this record were examined. This number consisted of records of cars resold from April 1, 1925, to April 1, 1926, thus including cars repossessed from December, 1924, to April, 1926.

his ability to meet the payments; but before this overestimation advances to a point where it affects repossession, his ability is also overestimated by the dealer and the credit man. It is entirely conceivable that, in certain cases, such an overestimate might be made by both the purchaser and the dealer.

3. Failure Properly to Appraise the Place of the Motor Car in the Economy of the Individual

This cause may be linked up with the overestimation of the ability of the purchaser to pay. This is a case of the "foolish purchase," or, from the dealer's standpoint, the "unwise sale." It is the case of a purchase made by a man who should have sense enough to know that he will not want to meet the payments because of other things more desirable, or that he can not meet the payments because of other obligations more pressing. Where this is the case, repossession will in all likelihood occur at an early stage of the payments—in fact, probably before any payments are made. The down payment is made, a vacation trip is possibly taken and then, after two months or so, the car is given up.

4. Unforeseen Changes in the Ability of the Purchaser to Pay

These changes may be due to two causes. First, there may be a change in earnings, due to alterations in general business conditions, industrial movements, or occupational disturbances; or there may be alterations due to a change in the purchaser's own ability, as a result of ill health, accident, etc. Secondly, there may be a change in the expenditures of the purchaser, due to varying needs, illness, etc. It is clear that only in so far as these changes in income or expenditures are *unforeseen* need they affect repossessions. It also follows that the degree to which this factor affects repossessions

will increase with the length of the period over which the time of payment is extended. Since the difficulty of predicting the future becomes greater the longer ahead one attempts to foresee, it follows that repossessions from this cause start at a minimum and increase to a maximum on the last payments.[1]

5. Changes in the Wants of the Consumer

These may be due, for example, to his moving to the city, going abroad, changing his work, so that he can not make use of a car, etc.

In so far as this change in wants is found in the case of the purchaser who will not voluntarily meet a promise to pay that it is not in his interest to meet, and who, at the same time, is not in a financial position to be forced to pay, it may result in repossessions. Because of the unforeseen nature of these changes, the same argument applies as that which was mentioned above (number 4). It seems, therefore, that repossessions from this cause will be at a minimum on the first payments and will increase to a maximum at the end. To just what extent and in how many cases credit is extended on a basis which leaves the payment dependent upon the purchaser's "will to pay" is not known. The exceedingly small percentage of repossessions made on the last payment indicates that at this stage payments can be made when the loss of giving up a car is presumably greater than it was before.

6. The Upkeep of the Car is Greater than was Anticipated

This would cause the difficulties in connection with changes in purchasing power (numbers 2 and 3 above) to become more acute.

[1] This suggests one danger implicit in the long-time paper (e.g., 18 months). However, the minor rôle played by this factor, suggested later, makes it of little relative importance.

In so far as this factor exerted any effect, its influence would be toward a minimum of repossessions on the first payments and a maximum on the last payments.

7. Value of the Car not Equal to the Remaining Payments

The result of this condition is that it is no longer a good business proposition for the purchaser to meet these payments.

It is difficult to form an opinion as to the stage in the series of payments at which repossessions from this cause would occur. In the case of used cars, payments might exceed value at any step in the process, from the first to the last payment. In the case of new cars, it may be concluded that it is only seldom that a car of an average age of five or seven years would not be worth the final payment or two. Likewise, it is scarcely open to doubt but that, with a down payment of one-third, the car would be worth the remaining payments during the first month or two. On the whole, it appears reasonably certain (especially with new cars) that, in the case of conservative financing, instances in which the car was not worth the remaining payments to the purchaser would be extremely rare and due to exceptional conditions, such as price changes, alterations in the condition of the purchaser, or ill use of the cars.

It is true that the repossession figures appear to lead to the opposite conclusion. It should be remembered, however, that the selling of repossessed cars should be compared to a sale under the hammer rather than to a bona fide sale to customers acquainted with the article and in a position to buy it. The price obtained for the car is not indicative of what would have been its worth to the individual who owned it and who knew its worth; for the used car must be sold at a discount sufficient to entice the purchaser into taking the risk of

many possible faults, all of which few cars ever possess. In the face of, and apparently contradicting, the figures on losses and on the resale of repossessed cars, it seems possible that an investigation of individual cases in which repossession has occurred would reveal the many instances in which the purchaser suffered a real loss in having to give up his car—or, in other words, would show that there still remained in the car a bundle of transportation which he would like to have bought had not circumstances made it impossible for him to do so.[1]

This supposition is somewhat strengthened by the statements of a number of dealers[2] who report no losses on the resale of repossessed cars. This can not by any means be taken as symptomatic of the general situation; but it at least indicates that in some cases it is possible for the dealers, by wise selling, to realize the equity involved.[3]

To the extent that it is true that the value of the car to the dispossessed is greater than the unpaid instalments, there exists an indictment against sales so resulting in that they cause a loss to the original purchaser[4] of the car, and then an additional loss to the one who repossesses and resells it.

On the other hand, it necessarily follows that the desire of the buyer to give up his car because the remaining payments exceed the worth of the car to him must play an insignificant rôle in those causes which give rise to repossessions, and in such cases we have the possibility of the purchaser taking a loss, but at the

[1] An interesting side light is thrown on the used-car price situation by certain experiments in Los Angeles and elsewhere in which the sale of used cars has been greatly facilitated by certifying the cars so as partly to eliminate the cause of uncertainty existing when a used car is bought.

[2] "Experience of 360 Dealers"; General Motors Acceptance Corporation.

[3] See Appendix Five.

[4] It may, of course, be true that the purchaser has already obtained a value equal to the payments made and that there is thus on the transaction so far no absolute loss but only a failure to receive a prospective gain.

same time avoiding an additional loss by shifting to the seller property not worth to him the unpaid balance. It is questionable, in such circumstances, whether the purchaser actually sustains a loss or whether, on the other hand, he has been compensated by use of the property for the amount he has paid. In so far as it does constitute a factor, it is difficult to conclude at what stage in the series of payments it would exert its effect. In the case of new cars, this would probably not occur so often on the first, nor yet on the last, payment. With used cars, where it would be of more importance, the distribution would probably run more evenly from the first to the last.

In addition to the direct effect possibly produced by this factor as a reason for giving up one's car, the ratio of value to unpaid instalments would exert another very real influence upon repossessions, in checking the force of other factors. If the value in comparison to unpaid instalments were high, every effort would be made by the user to meet the payments. This undoubtedly constitutes one of the most important reasons for the small number of repossessions (especially in the case of new cars) on the last payments, where as much as five or six years of transportation remain in the car.

8. Other Factors

Factors not mentioned above might affect repossessions, e.g., changes in models or prices, etc. These factors would, however, work through the factors already mentioned.

We have now examined a few of the factors which are usually considered to affect repossessions and have also stated some hypotheses as to when these factors would produce their effect.

In summary form, the conclusions as to the time when the factors become effective may be presented as follows:

I. Repossessions due to (1) overestimation (by purchaser and seller) of the ability of the purchaser to pay, and (2) failure properly to appraise the place of the motor car in the economy of the individual would be most effective in the early instalments, causing failure to meet payments on the first, the second, etc., instalments, diminishing to the last payment, when comparatively few repossessions could be attributed to this cause.

II. Repossessions due either to the fact that the value is not equal to the unpaid instalments or to intentional breach of faith are of slight importance and are in all likelihood evenly distributed from the first to the last payment.

III. Failure to anticipate upkeep expenses, unforeseen changes in circumstances which alter the desirability of a car to the individual, and unforeseen changes in the ability of the buyer to pay, will be more instrumental in affecting payments on the last instalments—i.e., those most removed from the time of purchase.

IV. Other factors, such as changes in models, prices, etc., which might occur at any stage, would probably affect the situation by working through some of the preceding factors.

EXAMINATION OF THE PAYMENT ON WHICH THE REPOSSESSION WAS MADE

An examination of the payment on which repossessions have been made should, on the above assumptions, afford us some ground for conclusions as to the relative importance of the different factors. Charts 1 and 2 show how far along in their payments were the purchasers whose cars were repossessed.[1]

[1] The charts are based on figures from a sample of over two thousand items. All payments are reduced to a 12 months' basis, so that the column above "9", for example, should be read "number of repossessed cars whose owners had paid 9/12ths of their instalments."

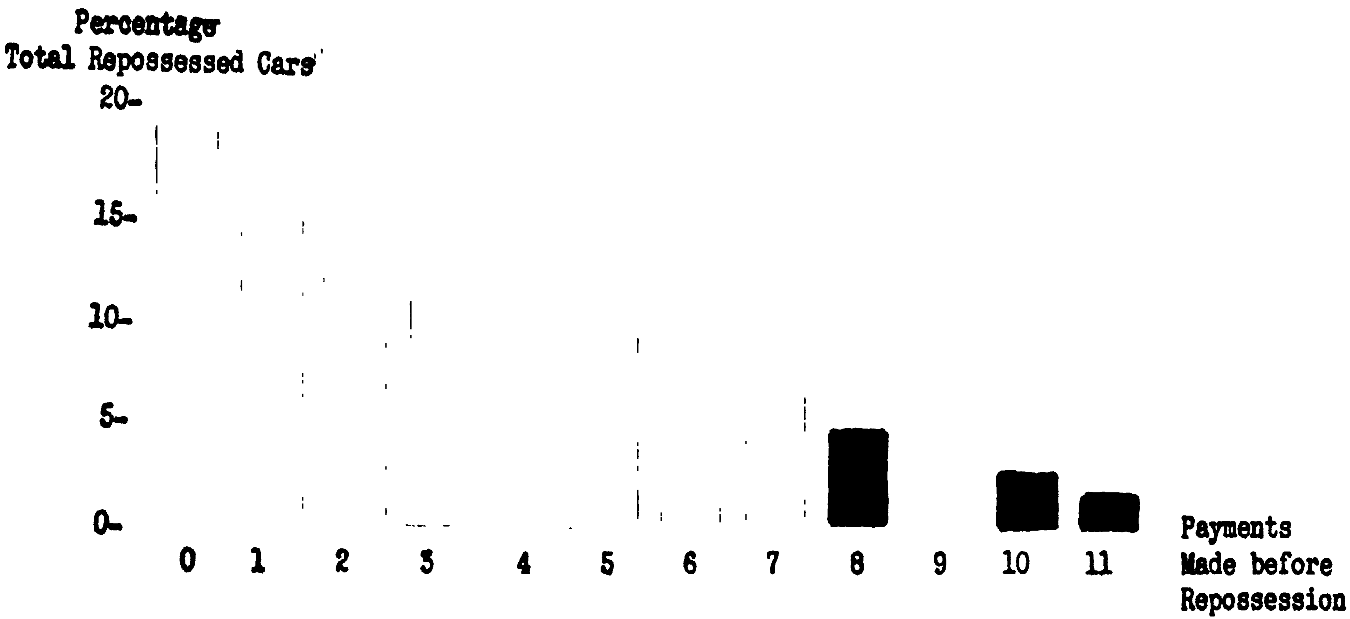

CHART I. TOTAL NEW CARS

PERCENTAGE OF TOTAL REPOSSESSED CARS ACCORDING TO THE STAGE OF PAYMENT

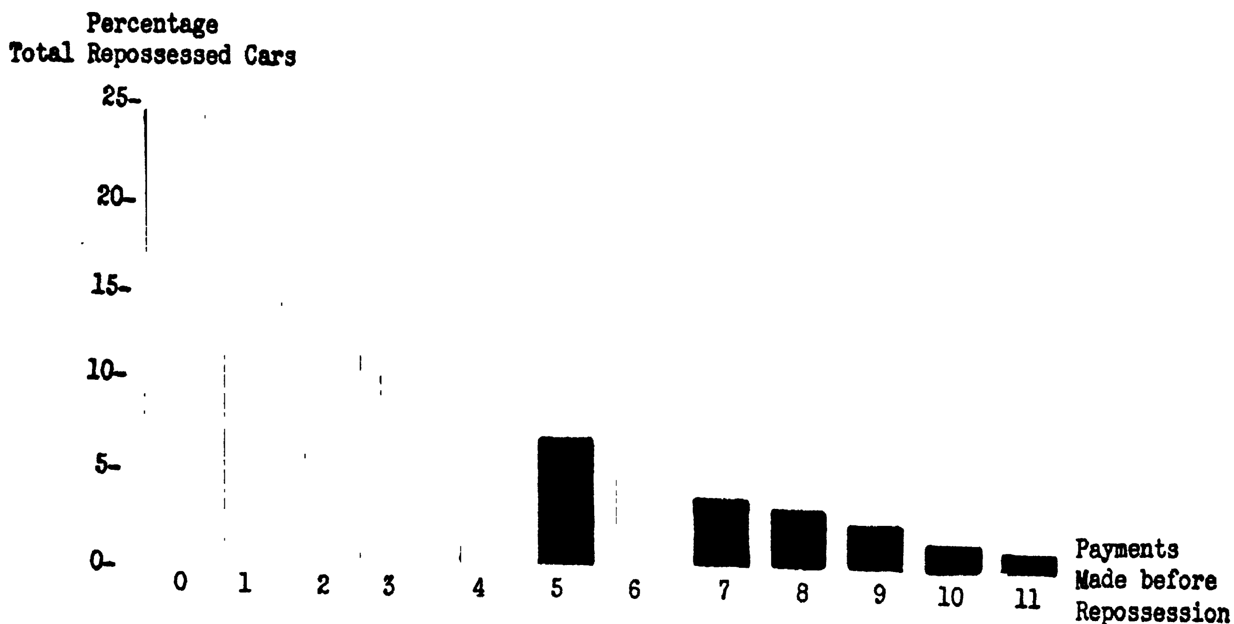

CHART 2. TOTAL USED CARS

PERCENTAGE OF TOTAL REPOSSESSED CARS ACCORDING TO THE STAGE OF PAYMENT

These charts disclose the fact that the largest percentage of cars repossessed are repossessed before any payments are made. In the new cars, over 18 per cent, and in the used cars over 24 per cent, of repossessions fall within this class. From this level, the columns diminish in height, showing a fairly regular decrease in the number of repossessions which are made as the purchasers progress with their payments, until the last, when, with only one instalment remaining, approximately only one per cent of the repossessions is made. Starting at the first column (representing repossessions made before any payments are made), in which 18 per cent of all new cars repossessed, and 24 per cent of all used cars repossessed, are accounted for, let us attempt to break up into their elements the causes of repossession.

In the first place, it is reasonable to assume that the weight of unforeseen changes in ability to pay or in the wants of the purchaser (mentioned on the preceding pages as the third category) is relatively small in this group, because of the proximity to the time of purchase when an estimation of the future was made. Likewise, upkeep expenses are at a minimum (at least with the new cars) and may be deemed of slight importance. The opinion that cars were given up because their value was not equal to the unpaid instalments or because of an intentional breach of faith (the second category above) also seems untenable in the face of the fact that a down payment had just been made. We are then reduced to the causes in the first category mentioned on the preceding page in order to explain these high repossessions during the first month, as well as in the succeeding early months. These causes, it will be remembered, pertain to the failure of the purchaser and of the seller properly to take into account the position which the car will occupy in the economy of the individual, his true ability to pay and, last of all, the dealer's failure so to

"tie up" the purchaser that he must pay if he is able to do so. In short, it is a case of unwise buying and unwise selling.

If now we go to the last column, i.e., to the repossessions made where only one payment still remains, we have a picture of the results of the factors affecting repossession in proportions the reverse of those existing in the first case. In other words, category one mentioned above is relatively unimportant and category three is of more significance. For by this time the foolish buyers have largely passed out of the picture. The repossessions made here may be considered to be chiefly the result of unforeseen contingencies—changes in the ability to pay and the wants of individuals—accentuated by increased cost of upkeep and running expenses.

In between these two extremes stand the columns representing repossessions made at other stages of the process. If a sufficient sample, covering a large period of time, were obtained, it is reasonable to think that the steps down from the first and highest columns would be more uniform and even. Some of the irregularities may be accounted for. For example, it is possible that the ever improving business conditions in 1925 brought about a greater number of repossessions on the last payments (i.e., repossessions were put off to a later date) than would have occurred otherwise, and that normally we should expect a low percentage earlier in the series of payments so that, before the last payment was reached, a minimum would be more closely approached from, say, the seventh payment on.

The columns shown on Chart 3 represent the same data as those shown on Chart 1.

In estimating the weight of the various factors which affect repossessions, the last column was analysed first. It was assumed that the factor of most importance in

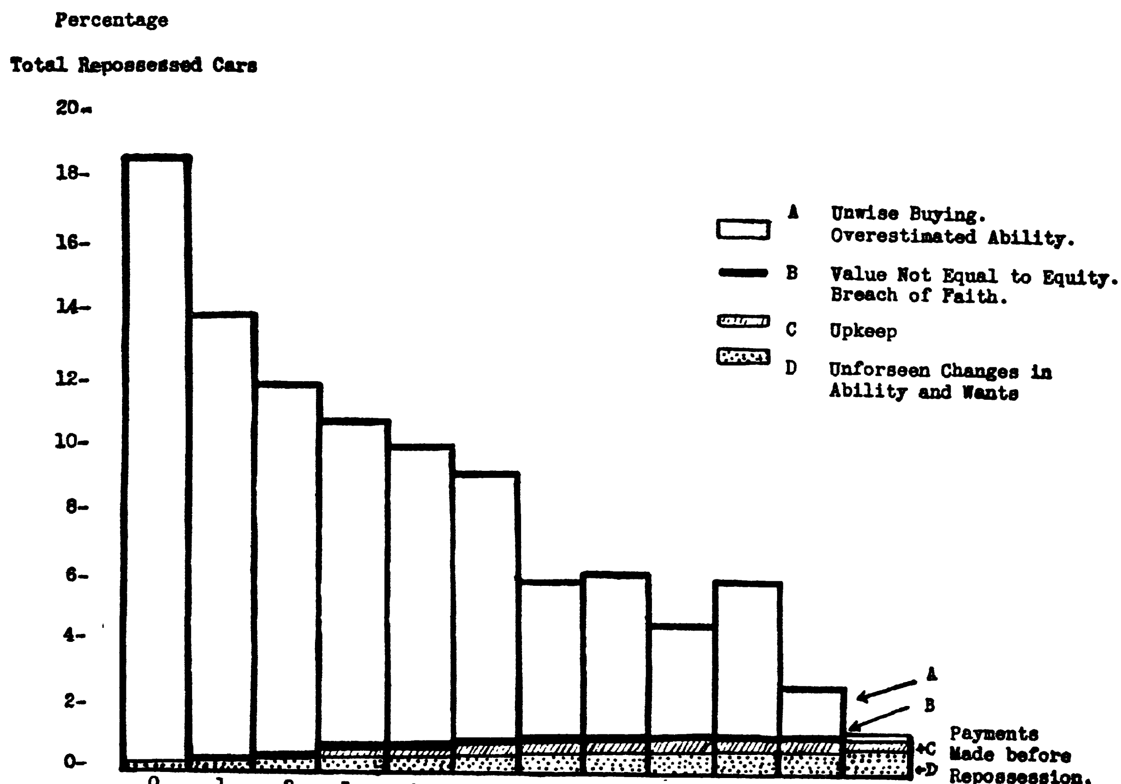

CHART 3. ASSUMED CAUSES OF REPOSSESSION (SEE CHART I)

PERCENTAGE OF TOTAL REPOSSESSED CARS ACCORDING TO THE STAGE OF PAYMENT

this case consisted of the unforeseen changes in ability to pay and in wants. Assuming that these constituted almost the whole of the causes affecting repossessions in the last month, and that these causes were at a maximum at that time, the distribution of repossessions may be assumed to be as indicated on the chart. Likewise, repossessions brought about by increased upkeep can be assumed to be at a maximum in the last column and to be less in each preceding one. Allowing for the few repossessions due to intentional breach of faith and to the fact that the value of the car is not equal to the remaining payments—repossessions for which we assume a more or less even distribution—we have now before us a hypothetical analysis of the causes of repossessions. By subtracting those portions to be attributed to the special causes enumerated above, we have left a remainder which may, with considerable justification, be attributed to unwise buying and to unwise selling.[1] Thus an examination of Chart 3 appears to indicate that practically all of the repossessions may be attributed to mistakes in selling. They are due to the extension of credit where credit should not have been granted. To the failure properly to judge the credit situation of the buyer, it seems fair to ascribe the repossessions represented by all of the area (in Chart 3) except that referring to repossessions due to "unforeseen changes in ability to pay and wants," and some of that representing repossessions due to breach of faith, or outright fraud on the part of the purchaser.

That some control over repossessions is possible by

[1] It is entirely possible that the increased likelihood of owners disposing of their cars on the last payments as compared with other payments would, to a certain extent, change the form of this Chart (No. 3) in so far as we were explaining repossessions actually made; so that a working ideal might be a bell-shaped distribution (i.e., small on the first and the last month, with a larger amount on middle payments) as is suggested by the distribution of repossessions on those cars sold in the months of November, 1924 (Chart 4), December, 1924 (Chart 5), and January, 1924 (Chart 6). See explanation of these charts below.

exercising wise judgment in periods of buying enthusiasm is substantiated by a comparative examination of the distribution of repossessions of cars bought in different months. For the purpose, the months of November, 1924, December, 1924, and January, 1925, may be compared with April, 1925 and May, 1925.

November, December, and January are winter months in which the "automobile fever" is below normal—the time of the year when the least temptation is offered to the buying of a car. This is the season when we should expect buying beyond one's means, and buying because of a supposed desire which is later found to be non-existent, to have the least weight upon subsequent repossessions. Furthermore, the ardor of purchasers and would-be purchasers in this period was being chilled by other than wintry blasts and flurries of snow which were causing them to prefer the fireside to the country road. The frozen nature of business conditions which threatened the country in the late summer and fall of 1924, just preceding the presidential election, had left a cloud of uncertainty hanging over the business of the nation. With the depression of 1921 still lingering in their memories, both purchasers and dealers were inclined to take a conservative, if not a pessimistic, view of the situation. Sales dropped to the extremely low level of approximately one-fourth of the sales for the peak month (April) of 1924 and lower than the troughs of 1923 and 1924. The curve of financing discloses a similar movement.

Turning now to the situation in April and May, 1925, we find both general business conditions and the seasonal factor operating in the opposite direction from that mentioned in the preceding group of months. With spring weather, the automobile business meets a budding enthusiasm which bursts into full bloom in April, May, and June, usually the peaks of retail sales and

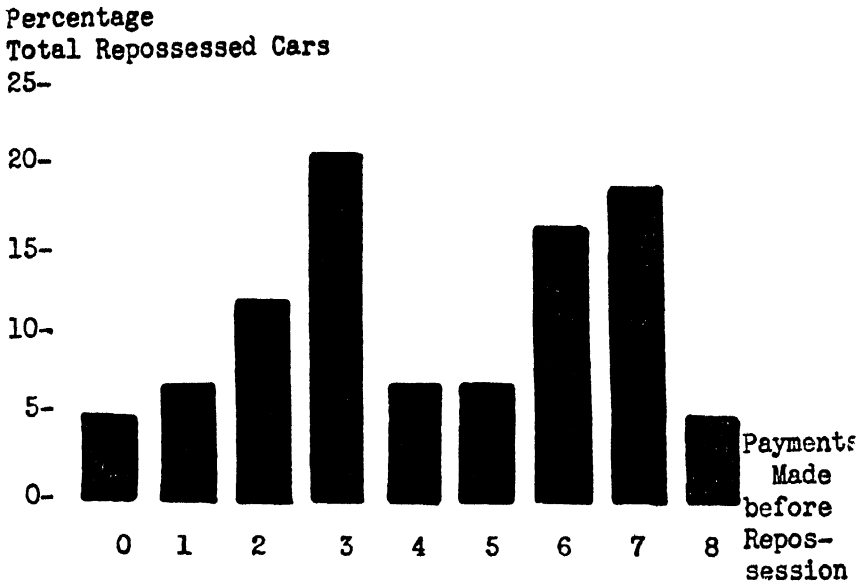

CHART 4. CARS BOUGHT IN NOVEMBER, 1924

PERCENTAGE OF TOTAL REPOSSESSED CARS ACCORDING TO THE STAGE OF PAYMENT

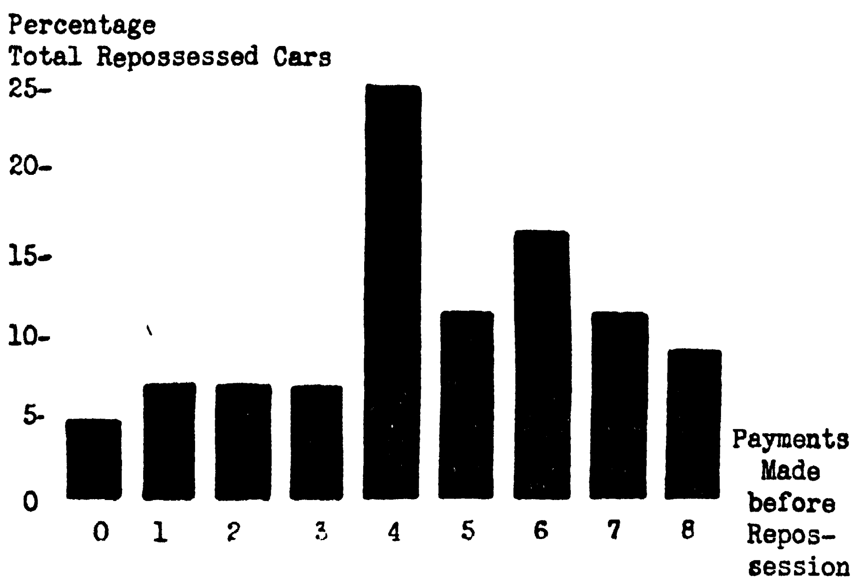

CHART 5. CARS BOUGHT IN DECEMBER, 1924

PERCENTAGE OF TOTAL REPOSSESSED CARS ACCORDING TO THE STAGE OF PAYMENT

financing. Coupled with this customary seasonal spur to the automobile business, there were at this particular period additional reasons for optimistic buying and an optimistic view of credit conditions. The fitful disturbance of business and business confidence preceding the presidential election was over. Business, now reassured, continued on an upward climb.

It is not surprising, therefore, that April witnessed a high-water mark in sales to users and a peak in the financing. It now remains to analyse the results of the

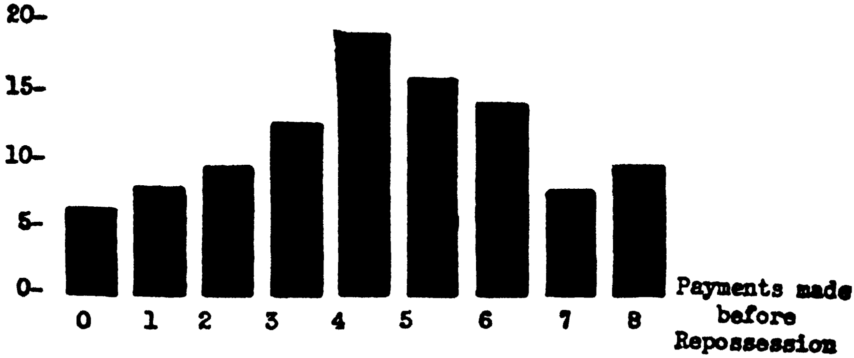

CHART 6. CARS BOUGHT IN JANUARY, 1925
PERCENTAGE OF TOTAL REPOSSESSED CARS ACCORDING TO THE STAGE OF PAYMENT

business of these two different periods—to compare the repossessions on cars sold in the drab days of November, 1924, December, 1924, and January, 1925, with those on cars sold during the peak periods of April and May, 1925.

Charts 4, 5, and 6 show the distribution of repossessions made on cars bought in the months of November, 1924, December, 1924, and January, 1925, respectively.[1]

Charts 7 and 8 show similar data for the months of April and May, 1925.

In spite of some irregularities, the tendency in the

[1] Repossessions on cars bought in these months are taken for only eight months in order that they may be comparable with those on cars bought in April and May, where the record is not complete for the entire twelve months.

two cases is pronounced. For the cars sold in November, December, and January, repossessions start at a low level and then rise. For those sold in April and May, on the other hand, the diminishing height of the columns is even more pronounced than was found in the charts presenting general averages (Charts 1 and 2).

These two tendencies, working in opposite directions for the two periods, are readily understood when we recall the observations made above as to the causes of repossessions and the time at which these factors affect repossessions. In the winter months, under the spell of depressing seasonal and business conditions, the possibilities of unwise buying and unwise selling are at a minimum. This does not, of course, mean that some, or even the majority, of the repossessions made on cars sold during this period are not due to this cause, but only that this factor is relatively less active than in the second period. Consequently, a large volume of repossessions, which would have existed had this cause been relatively important, does not appear in the first, the second, nor yet in the third month. The repossessions, instead of decreasing, actually increase as the time is farther removed from the date of purchase and as the factors which were unforeseen even by the conservative buyer and the careful dealer now make their appearance in increasing numbers.

The repossession experience of cars bought in April and May requires little further explanation. Under the lure of optimistic business and seasonal conditions, unwise buying and mistakes in credit extension are at a maximum. Repossessions follow, and follow very soon, in the wake of such sales, continuing with diminishing strength as the more serious misfits are eliminated. The experience of April and May, therefore, depicts in a more definite form the specific results of factors whose influence was uppermost in determining the general

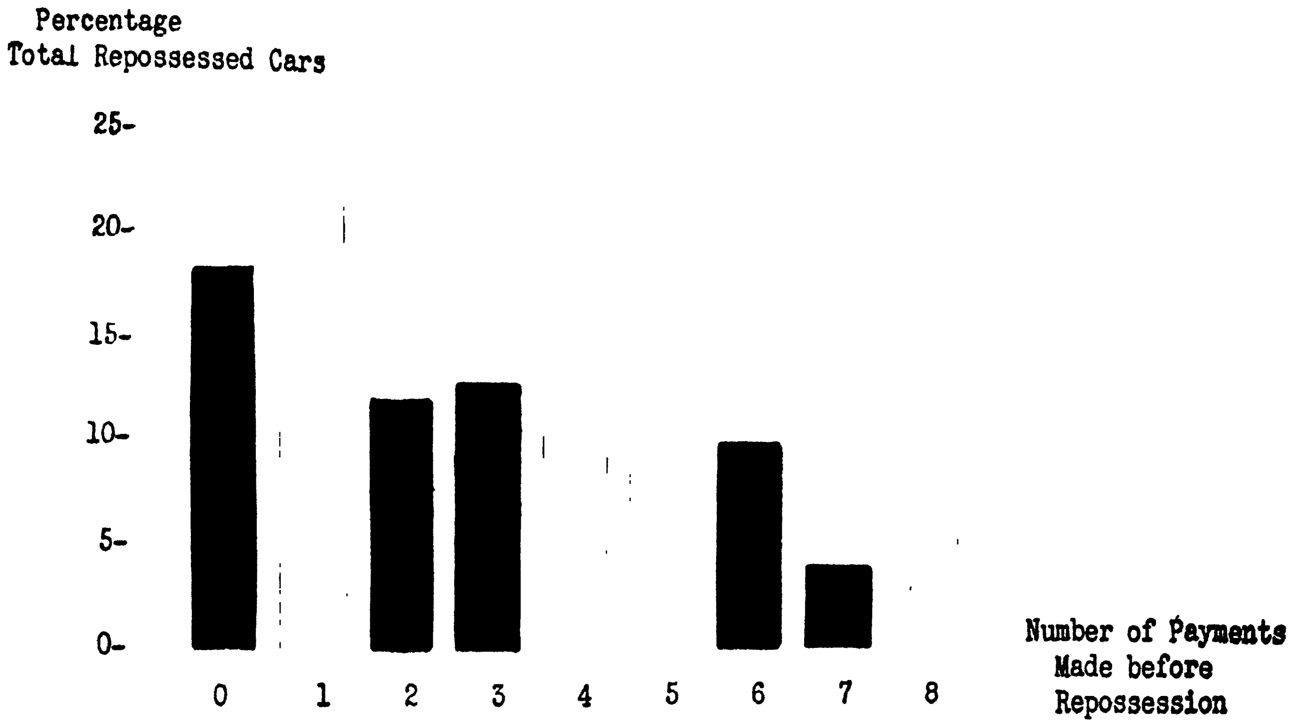

CHART 7. CARS BOUGHT IN APRIL, 1925

PERCENTAGE OF TOTAL REPOSSESSED CARS ACCORDING TO THE STAGE OF PAYMENT

form of average conditions graphically presented on Charts 1 and 2.

Another comparison, from which conclusions similar to those drawn above necessarily follow, is that of contrasting the distribution of repossessed cars, the payments on which first became delinquent in the month of January, 1925, with those of January, 1926. The results are presented graphically on Charts 9 and 10 respectively. In this case, we are looking backward to cover cars bought during the previous year and on which instalments are not met during the month in question. What is shown in this case is, however, the same as that which was learned above in the comparison based upon the time of sale.

In January, 1925, following an era of careful selling, only a small percentage of repossessions is represented by cases in which nothing, or only one payment, was made. Repossessions on cars where payments became delinquent in January, 1926, following an era of business prosperity and of unprecedented buying (especially in the last part of 1925) present a different story. Chart 10 retells the familiar story of large numbers of repossessions on the first payments, and of a gradual diminution of repossessions to the last.[1]

A somewhat similar effect of conditions at the time of sale can be detected by an examination of the curve showing the ratio of net write-offs to paper purchased in different months (Chart 12)[2] and a comparison with

[1] Since, in Charts 9 and 10, we are dealing with relations which pertain to actual numbers of cars sold in different months, it is readily seen that this would involve an error because the number of cars repossessed from those sold in a month of large sales should not be compared with the number repossessed from those sold in a month of small sales. The figures were accordingly corrected to show what the repossessions would have been each month (on the basis of percentage actually existing) if sales had equaled those of the peak months of the periods.

[2] It must be remembered, however, that write-offs are also affected by business conditions at the time of maturity; so that this method is not entirely satisfactory or conclusive.

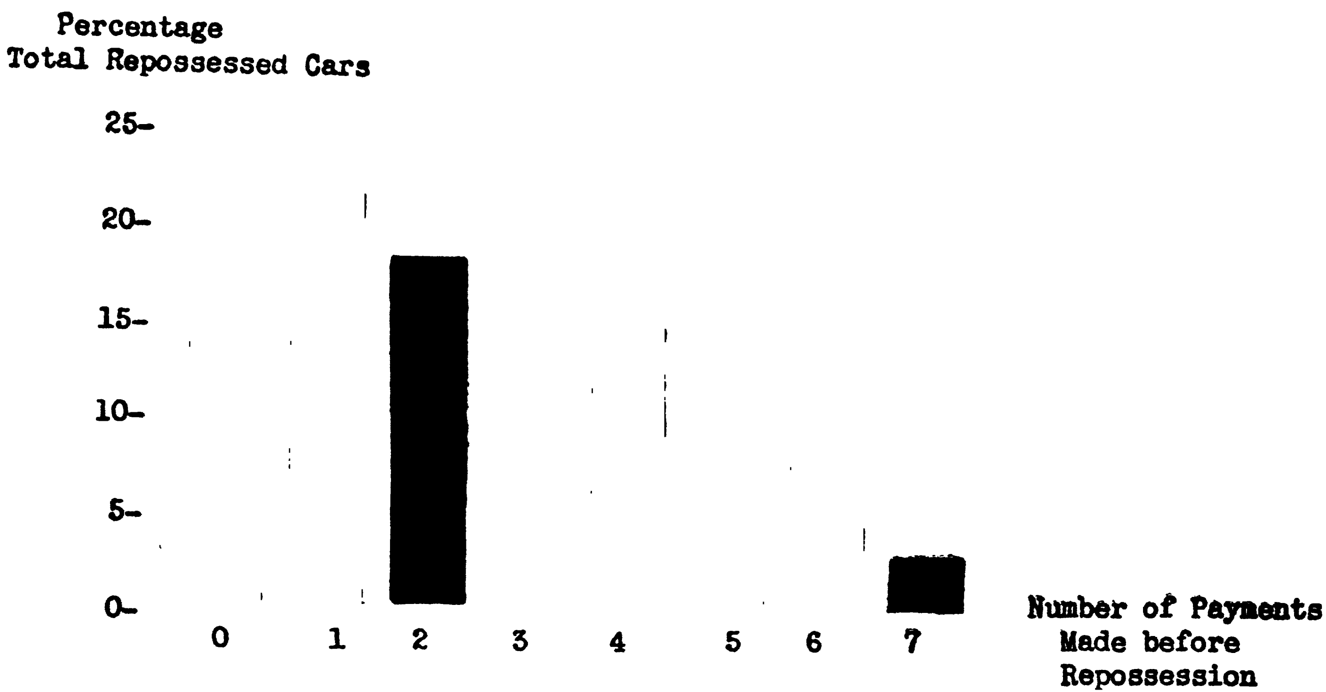

CHART 8. CARS BOUGHT IN MAY, 1925

PERCENTAGE OF TOTAL REPOSSESSED CARS ACCORDING TO THE STAGE OF PAYMENT

a curve representing business conditions or purchasing power. For this purpose, the *General Index of Factory Pay Rolls* (Federal Reserve Bank) may be taken as indicative of fluctuations in the general purchasing power (Chart 13).[1]

A cursory comparison of these two curves suggests the existence of a correlation, the determination of which is made impossible because of the short period over which the data run and because of the abnormal disturbances in a new business. When the payroll curve was rising in late 1919, cars were being sold on which there was subsequently a high percentage of net write-offs. This correlation is even more noticeable in sales following the peak boom days of mid-year 1920. The curve of purchasing power (factory payroll) begins to drop in the latter part of 1920, then follows (with a lag of some two months) a drop in the write-off curve which dips to its trough in late 1922, some time after the payroll curve, which reaches low points in late 1921 and early 1922. A slight upward trend in the write-off curve may be seen to accompany the upward swing in the payroll curve, which came in 1922–1923.

This analysis suggests the possibility of a connection between conditions at the time of sale and the ultimate losses incurred which follows the identical channels as did the analysis above when the same matter received consideration in connection with the data on repossessions.

The results of the last analysis are, however, far less conclusive than those of the first. For, in a study of write-offs, it must be borne in mind that not all sales which really "go bad" reach the finance company. The height of the write-offs is related to the stability and credit standing of dealers—and this has probably been one of the most variable of the factors affecting the

[1] Federal Reserve Bulletin, September, 1925, p. 669.

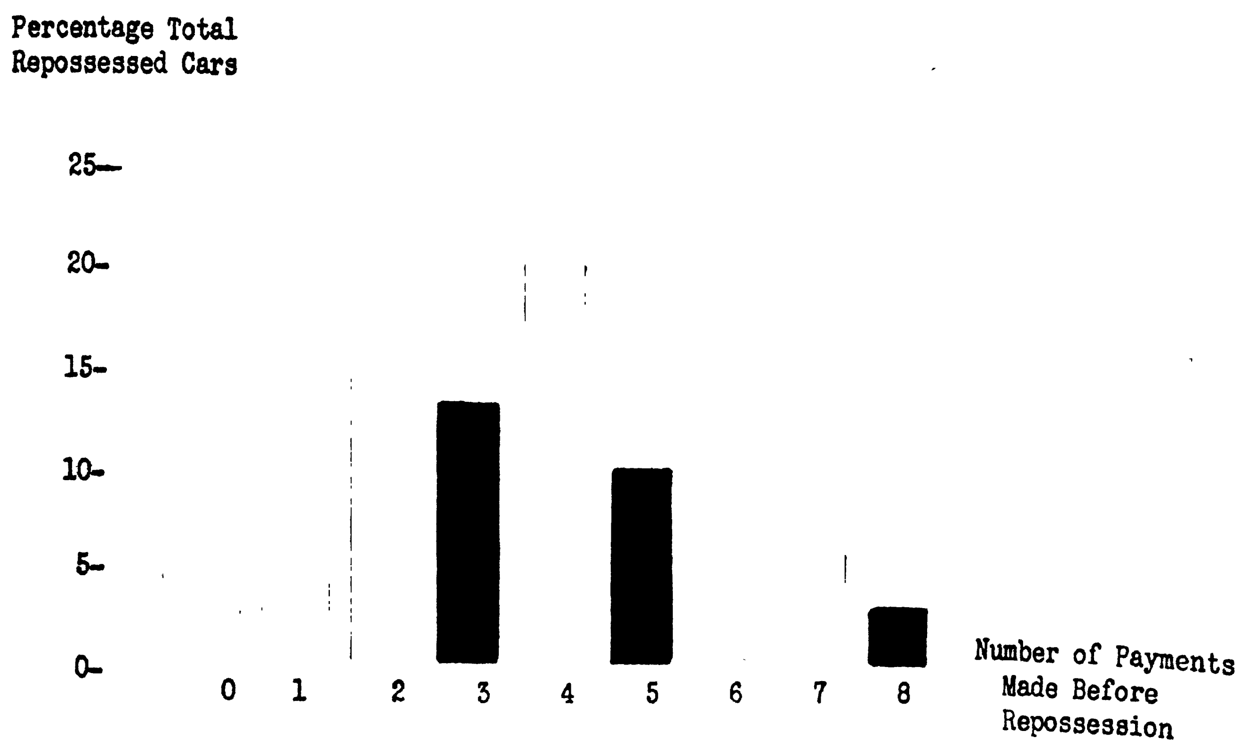

CHART 9. CARS ON WHICH THE ACCOUNTS BECAME DELINQUENT IN JANUARY, 1925

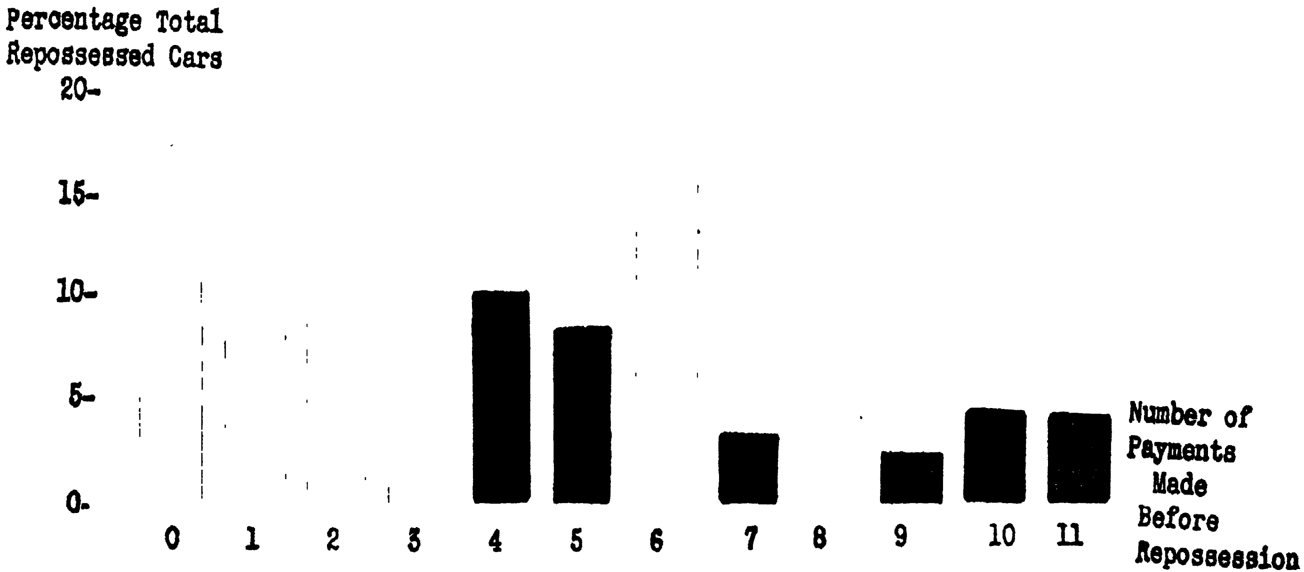

CHART 10. CARS ON WHICH THE ACCOUNTS BECAME DELINQUENT IN JANUARY, 1926

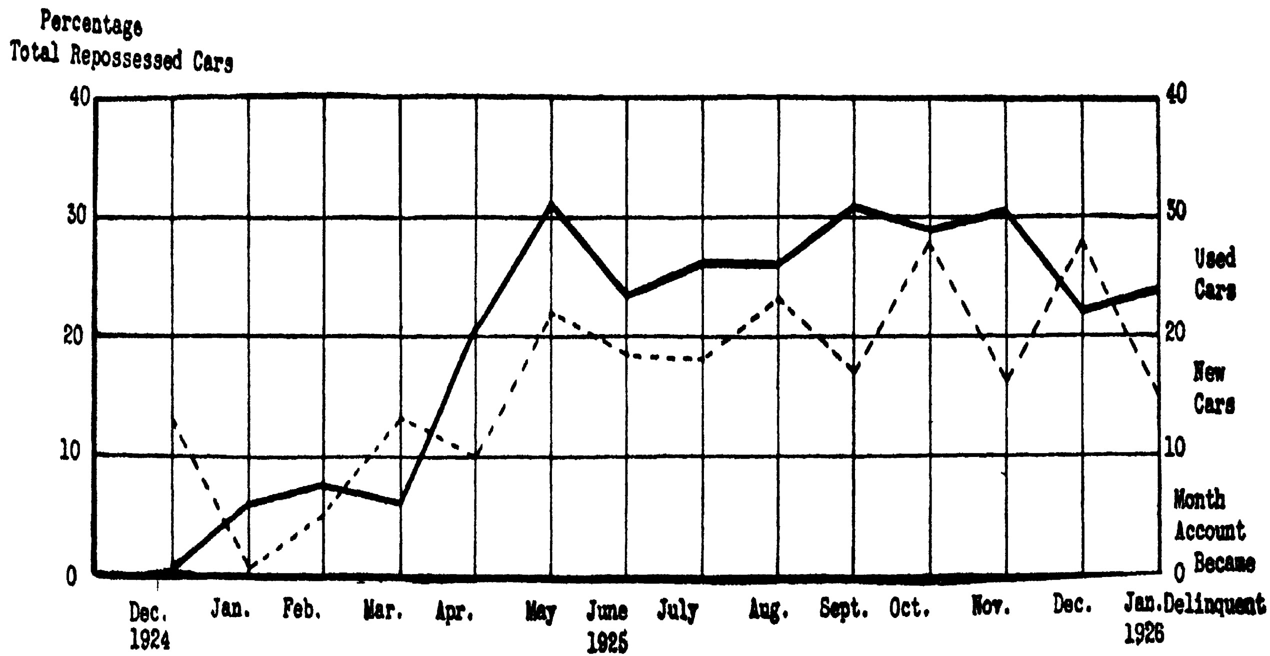

CHART II. PERCENTAGE OF TOTAL REPOSSESSED CARS ON WHICH NO INSTALMENTS WERE PAID

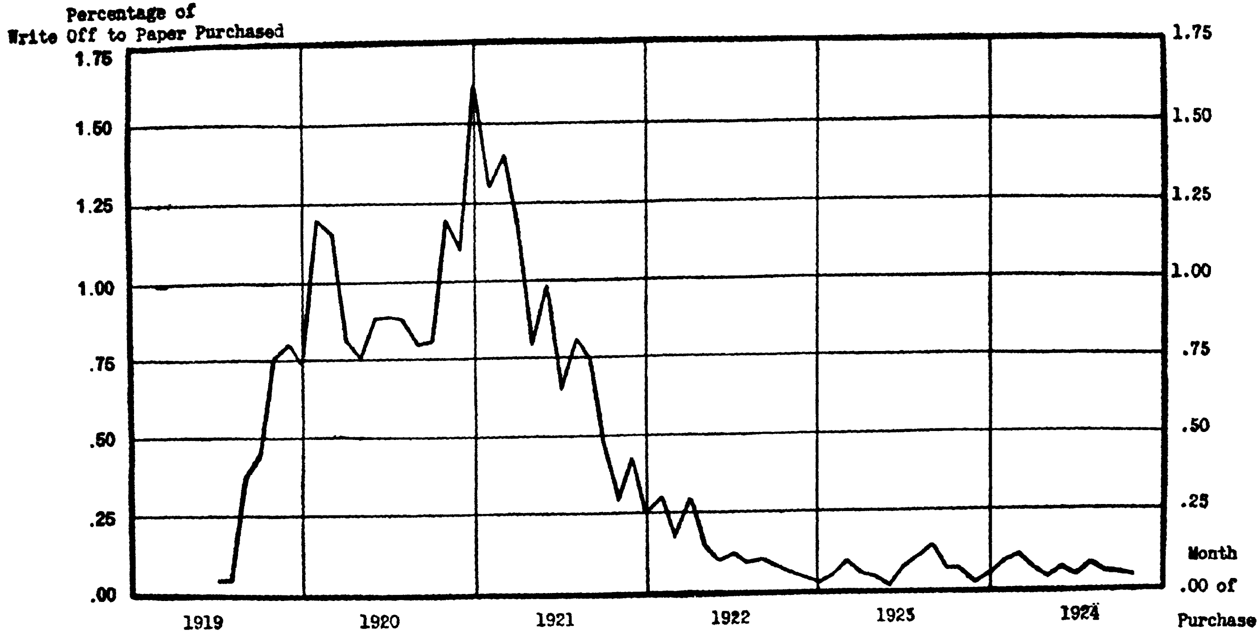

CHART 12. PERCENTAGE OF TOTAL PAPER PURCHASED EACH MONTH FINALLY REPRESENTED BY NET WRITE-OFF

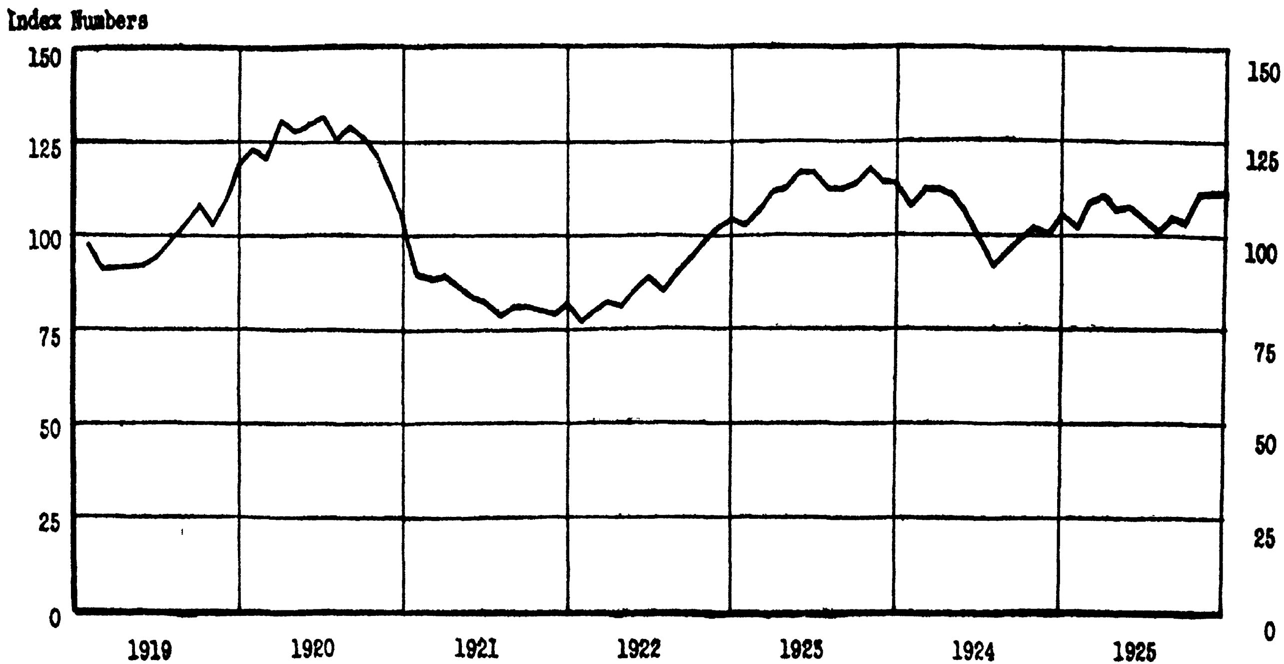

CHART 13. GENERAL INDEX PAY ROLL IN MANUFACTURING INDUSTRIES

situation. This change in the position of the dealers has undoubtedly been one of the outstanding causes of the phenomenal drop in the percentage of write-offs from 1921 to the present. The high losses of 1920–21 must, therefore, be recognized as the price which had to be paid for the quality of dealers selected in the "boom" period and the subsequent house cleaning of dealers and large turn-over which followed this period.

It must be concluded, therefore, that in addition to the effect which the errors in selling in "boom" periods produced on write-offs, there was the additional factor of the irresponsibility of dealers (who did not make good their endorsements) and of dealer turn-over to affect the situation.

It may be claimed accordingly that this is the predominant factor in bringing about the high percentage of write-offs—that the large turn-over of dealers following the "boom" days merely permitted a larger percentage of the paper which "went bad" to reach the stage of write-offs on the records and that what at first appears to indicate losses due to laxity of sales during time of prosperity is largely ascribable to dealer turn-over. This is undoubtedly true.

The high percentage of write-offs, which at first appeared to be accounted for by the unwise selling of dealers, must now be considered as influenced by dealer turn-over. While at first blush it appears that a factor of another nature has been introduced into the problem, it is discovered upon closer examination that the new factor is the same as the old, but merely demonstrated at a different place. Just as over-optimistic extensions of credit on the part of dealers finally produces its effect upon repossessions and losses, in the same way the over-optimistic selection of dealers in "boom" days is paid for by ultimate losses, because of the failure of these "fair-weather" dealers to withstand the storms of depression.

This suggests the fact that the finance company, as well as the individual dealer, has its problem of selection—a problem which, as a more exact survey of the situation would probably reveal, bears a close resemblance to that of the dealer in being more difficult and serious when the business barometer points "fair" than when the indicator is turned to "stormy," and that the seriousness of these problems may even be accentuated at times of the year when the mercury in the thermometer begins to rise.[1]

This indicates that if we pursued our analysis of repossessions one step further, to the point where these repossessions register losses for the finance company, it would be possible to break up the causes of losses, as was done in the case of the causes of repossessions, into a number of elements, a closer examination of which might suggest the degree of inevitableness or preventableness implicit in each.[2]

[1] The truth of this hypothesis could be checked up very much in the same way as was that in the case of repossessed cars by studying the records of those dealers who have failed. From the point of view of the finance company, the selection of dealers is quite as important as is the selection of the purchaser; for, as a matter of fact, it is largely a selection of a credit risk when the dealer is chosen.

[2] The great dependence of the future of instalment selling—whether from the point of view of the finance company or from that of society as a whole—upon the type of men, both as to character and ability, performing the functions of dealer is suggested by numerous facts. It seems, therefore, that the problems of the dealer should be at the forefront of any study of instalment selling. A glance at the situation suggests some difficulty in securing men of desired ability for this work. The problem is the more difficult because of the many functions which the dealer is called upon to perform. He must not only be good in promoting the sales of new cars, but must also be an expert in the buying and selling of old cars, thus being subject to the necessity of judging the used-car market—a task comparable to that of the automobile manufacturer, with his corps of selected officers, in judging the market for new cars. Needless to say, deficiency in ability along this line puts an otherwise able dealer in line for failure. The entrance of instalment selling brings with it the necessity for additional ability to pass on credit possibilities, to estimate future business conditions, to make collections and, in the extreme cases, to repossess.

To obtain men qualified for these varied and difficult tasks requires careful selection and remuneration adequate to encourage able men to enter the field. The larger companies with the well-known cars are probably at an advantage in making selections. But, so far as remuneration is concerned, even an increase in the factory discount would not necessarily bring about the desired results. The necessary practice of trade-ins

RELATIONSHIP BETWEEN DELINQUENCIES, REPOSSESSIONS AND LOSSES AND BUSINESS CONDITIONS AFTER SALE

1. *Delinquencies*
2. *Write-offs*
3. *Percentage loss on resale of repossessed cars*
4. *Summary and Conclusions*

In the preceding discussion, emphasis has been placed upon the situation at the time of sale of the car as a factor in influencing subsequent payments. It has been pointed out that some of the difficulties could conceivably be prevented by reduction of mistakes. Attention was called to the large percentage of repossessions which are *apparently* due to preventable causes.

In thus studying the problem, however, care must be exercised not to emphasize one factor to the exclusion of another. Accordingly, attention is now directed to a consideration of the effect exerted by business conditions at the time of maturity upon the business after the sale. This relationship is more generally recognized than is the one which we have been considering. Owing to the consideration which it has already received, this phase of the subject may be passed over more briefly than its importance deserves.

The relations of conditions at the time of sale and at the time of maturity are so interwoven that in most cases it is impossible to segregate "causes" (if we may so designate those factors affecting delinquencies and repossessions). It is only by comparing certain specific cases which are in other respects similar that the effects

---

reduces the profits supposed to be made on cars, the actual profit depending upon the extent to which local competition compels a greater-than-value-price to be placed upon trade-ins. Whether these practices will finally result in a division of functions now performed by dealers (so that, for example, used cars now being handled by dealers would then be dealt in only by companies equipped for that work, or perhaps by the manufacturing companies), or whether an adjustment through competition will suffice, is extremely problematical. At any rate, careful attention to the problem seems to be justified.

of the one particular circumstance can be determined.[1] This, it is difficult to do in the case of business conditions at the time of sale.

A comparison of curves showing delinquencies, the percentage lost on repossessions, etc., with the factory payroll curve suggests the possibility of a correlation. Let us examine these curves.

1. Delinquencies

A comparison of the curve showing less-than-30-day delinquencies[2] (Chart 14) with the payroll curve indicates in a broad way the presence of negative correlation (i.e., the business conditions curve moves in a direction which is the opposite of that taken by the delinquencies curve). This is best seen in the high level of delinquencies during the depression of 1921–1922 and the gradual descent of the curve as business conditions improved in 1923.

2. Write-offs

The time at which write-offs are made is so subject to the policy of the finance company that little can be learned by comparing a curve showing write-offs (according to the month in which they were written off) with the business curve.

The large percentage of write-offs during and after the depression may be noted. The phenomenal decrease

[1] This was the method pursued above, from which the influence of conditions at the time of sale was suggested. This method is found to be much more difficult to use in endeavoring to arrive at the effect of conditions at the time of maturity. Neglecting conditions at the time of sale as a potent factor in subsequent repossessions, the number of repossessions by months would constitute desirable data. But those data are not significant because of natural changes in business policy, in dealer turn-over, and in the methods of keeping data, not to mention the limited length of time over which they run.

[2] Less-than-30-day delinquencies were taken as most representative because of the fact that delinquencies of a longer period are subject to more energetic influences exerted by the finance company looking toward adjustment, collection, or write-offs.

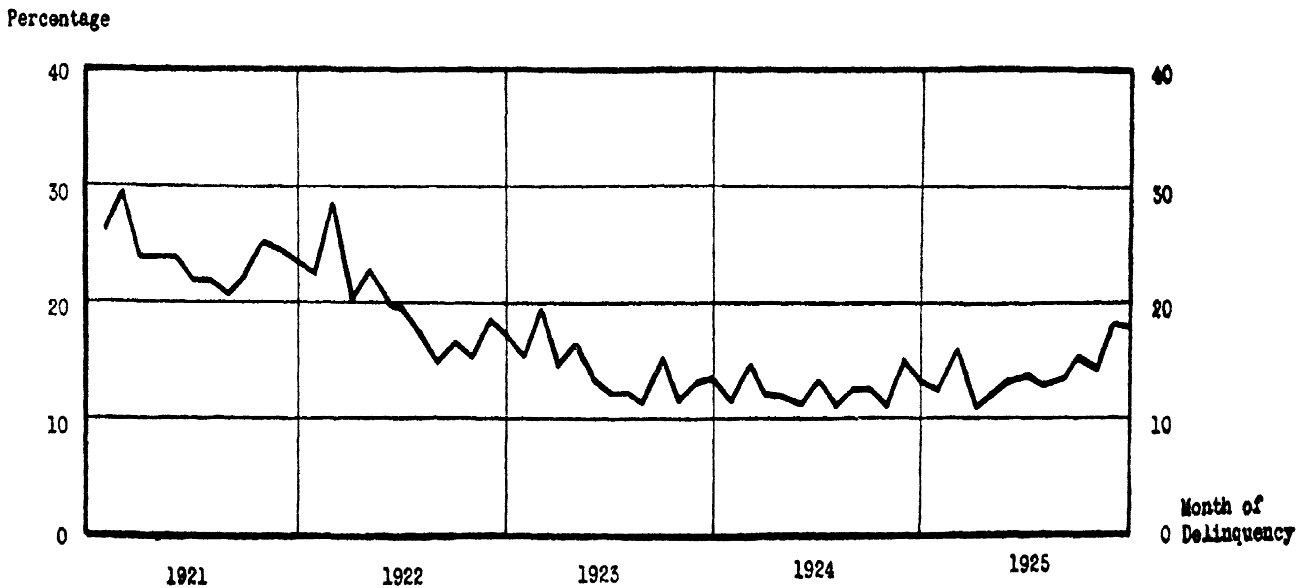

CHART 14. PERCENTAGE OF TOTAL RETAIL MATURITIES DELINQUENT LESS THAN THIRTY DAYS

in losses since that time largely shows the gradual perfection in the methods of a new business.

3. Percentage Lost on the Resale of Repossessed Cars

The loss on the resale of repossessed cars (Chart 15) is affected by so many factors that little is to be learned by a comparison with business conditions apart from the general influence of the state of business on the condition in the used-car market. The deplorable situation in the used-car market during the depression of 1921–1922 undoubtedly accounts in part for the high losses experienced in 1922 and well into 1923. Since that time the seasonal factor in repossessions has probably been more pronounced, although the seasonal bulges in new-car sales have been levelling off. A large percentage of the cars are repossessed in winter—a time when it is more difficult to sell them. Those which are sold are evidently disposed of at a disadvantage on the average, while many are held until spring[1] when fewer are being repossessed and thrown on the market and when, at the same time, the demand for used cars is at a maximum.

4. Summary and Conclusions

From the above analysis, the dependence of delinquencies, repossessions, losses, etc., upon business conditions after sale is, in a broad way, established, although the nature and extent of the dependence can not be accurately determined. Conditions after sale, as well as conditions at the time of sale, must then be considered as affecting repossessions. A difference in the final outcome of sales made in two months representing different

[1] What appears to be an exception of some interest is to be noted in the large number resold in January and February, 1925, after the business depression of late 1924. This, no doubt, is partly accounted for by the larger number repossessed and thrown on the market, but evidently also by the fact that used cars instead of new cars were being bought. This assumption is substantiated by the fact that at this time the ratio of used cars financed to the total cars financed reached its peak in the experience of the General Motors Acceptance Corporation.

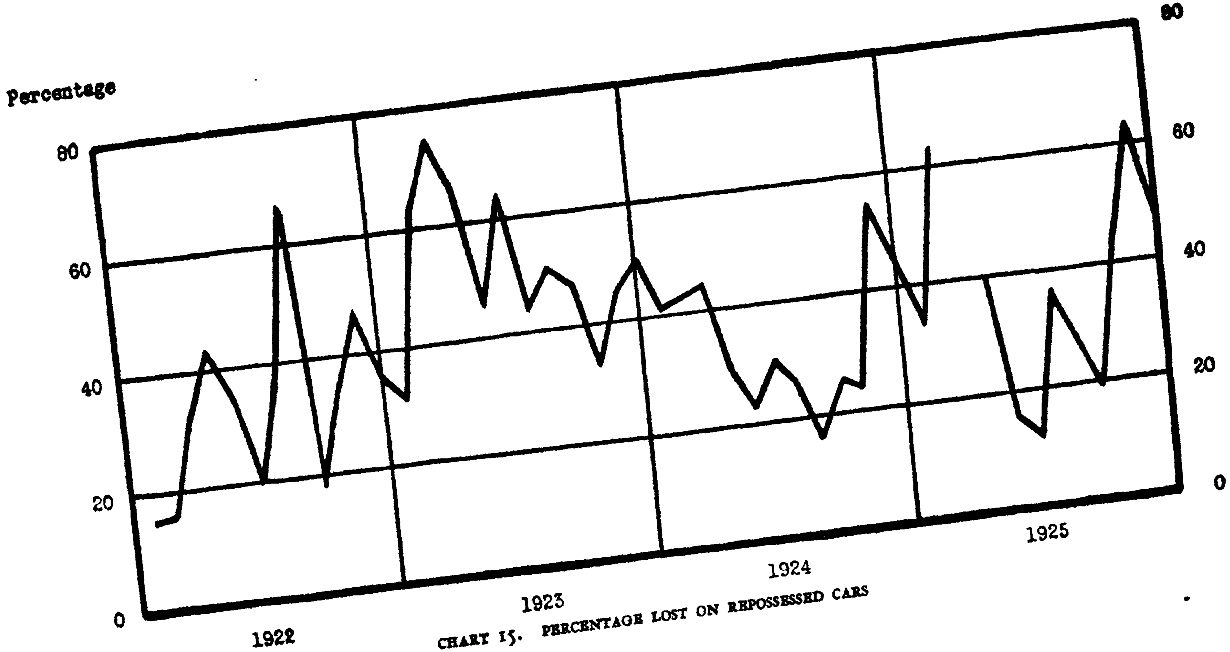

CHART 15. PERCENTAGE LOST ON REPOSSESSED CARS

business conditions can not be attributed solely to business conditions at the time of sale without regard to subsequent conditions. This was taken into account in the study of the effects of conditions at the time of sale. The attempt to eliminate this factor was the reason for the study of a number of different months and for the employment of the two methods of looking forward in the one case and backward in the other case. A more extended study covering a longer period is necessary to verify the results.

In one sense, repossessions due to business conditions after sale are to be treated as distinct from those due to the factors to be considered at the time of sale. Repossessions ascribable to this cause would thus be deemed to swell that part which is ascribable to unforeseen causes. In a broader sense, however, the possibility of changes in business conditions ought to be, and probably is, considered at the time of sale, and the degree of failure to do so may be held to be a factor of cause.

This subject is treated more fully in Exhibit One.

SUMMARY OF CONCLUSIONS

1. Conclusions regarding the experience of the General Motors Acceptance Corporation
2. Conclusions regarding instalment selling in general

In the light of the conclusions reached above, we may summarise the situation as follows:

Granting the assumptions (1) that repossessions effected before any payments are made are largely the result of unwise buying on the part of the purchaser and of mistakes in the extension of credit by the dealer and (2) that unpreventable repossessions due to unforeseen contingencies would be at a maximum in the month most remote from the purchase, and less in each preceding month, we arrive at a means of judging the relative weight of the various causes which affect repossession. With the results from an entire year supplemented and substantiated by those of specific months, the results indicating the preponderance of those factors which should be prevented by refusing credit at the time of the sale appear to be strikingly conclusive. It is evident that, if the assumptions indicated above are correct, most of the repossessions occur because of lax extension of credit at the time of the sale—something which should be prevented, which to a great extent may be prevented, and which in some measure actually has been prevented under certain conditions which encourage conservative selling practice in selected periods.

1. Conclusions Regarding the Experience of the General Motors Acceptance Corporation

These conclusions apparently constitute a criticism of the finance company and it will also be recalled that we may logically assume that factors affecting repossessions may be deemed identical with those resulting

in delinquencies and dissatisfaction on the part of the purchaser, even though the stage of repossession is never reached. This criticism is, however, considerably tempered by the experiences in regard to credit extension. The phenomenal decrease in the percentage of net write-offs to paper purchased (Chart 12) affords some indication of the progress made along this line. If this decrease is largely due to careful selection of dealers who assume losses so that they never reach the finance company, the results are even more promising, for it is through the dealers that the evils of unwise selling must be checked. It is easy to believe that the responsible dealer may be expected to do more toward a careful extension of credit than did the large number of "boom" dealers who went into the business in the after-the-war period, with little to lose and all to gain, and who had to be eliminated from business in the depression days which followed. The chance of sales being effected so that no repossessions will have to be made by the finance company is only one aspect of the situation. The possibility of a general rise in the standards of the dealers promises an improvement, in that dissatisfactions arising from unwise selling will be diminished.[1]

2. Conclusions Regarding Instalment Selling in General

If the above interpretation and the tentative inferences are correct, the possibility follows of drawing certain conclusions regarding instalment selling in general.

In the first place, it must be noted that the experience here discussed is that of one of the most conservative

[1] It must not be inferred from the above discussion that the number of repossessions made, and losses sustained, by the General Motors Acceptance Corporation presents a serious problem. As a matter of fact, the losses are practically insignificant. The significant fact is the large proportion (of this insignificant number) which is apparently due to preventable causes. See the following discussion.

finance companies dealing in the cream of instalment paper which requires the endorsement of the dealer making the sale. Even under these conditions, indications are that those evils of instalment selling which lead to dissatisfaction, delinquencies, repossessions and losses are in a large measure due to factors which, at least theoretically, may be checked at the time of sale. Stated in another way, it may be said that the factors which are inherent in instalment selling—those which are inevitable and can not be foreseen—play an exceedingly small rôle[1] in contributing to the losses. The ideal toward which the more conservative companies are striving may thus be considered as free from these preventable causes or misfits. Instalment selling as such is, therefore, not to be taxed with being wrong in itself; it is rather that those companies which have financed unwise sales and those individuals who have resorted to foolish purchases are to be criticised for misusing a legitimate institution.

There is little doubt but that some of the criticisms directed against instalment selling are valid, in so far as they relate to the abuses of the system. It can scarcely be doubted that the evils resulting from a lax extension of credit by speculative finance companies through non-recourse dealers have been considerable and that there have been great loss and great waste to purchasers, to finance companies, and to society as a whole. The loss to the customers generally is sometimes pointed out as a glaring example of the evils inherent in instalment selling. The loss to the finance companies is commonly suggested by the large numbers which are abandoning the struggle. The loss to society[2] is frequently viewed

[1] See Exhibit One, below, for a further discussion of these factors.

[2] It may be observed that if, under judicious financing, losses were entirely eliminated, the cost of instalment selling to society would be represented simply by the actual cost of operating the finance company, i.e., salaries, rent, etc. Profits of the company would, of course, not be included, as they represent only a transfer of wealth. The losses of the General Motors Acceptance Corporation are almost negligible, so

with alarm by people who fear that the capital of society is being dissipated.

In the light of the preceding analysis, it is extremely doubtful whether any of the above factors is to be considered as inherent in instalment selling. Whether or not we characterise those practices of inefficient business and consequent high charges as abuses or as normal developments in a new business, whether the high profits earned by the more efficient companies are to be termed an abuse or merely the efficient exploitation of a business opportunity, the fact that these conditions have existed does not by any means prove that they must continue to exist. On the contrary, the cutting of rates to a point which approximates the cost to the more efficient companies is already in evidence. The "weeding out" of the inefficient appears to be under way. There may logically be expected an elimination of inefficient practices as well. The experience of the best finance companies indicates that they have already accomplished not a little along this line. At the same time, it must be observed that there are numerous channels in which they may still further perfect their methods.

EXHIBIT ONE

To what Extent may Causes of Repossessions which have in the Past been "Unpreventable" Cease to be so?

It will be recalled that on Chart 3 an attempt was made to analyze repossessions in order to determine what proportions were due to unpreventable causes. It was tentatively assumed that repossessions due to unforeseen causes are not preventable; but this does not

that it may, for all practical purposes, illustrate this fact. The reduction of its charges to a point where they approximate the cost of operation explains the margin of advantages which it possesses over many of the less conservative companies as disclosed by its rate charts.

mean that every factor which was unforeseen in the past must continue to be so. The upkeep charges may, for example, reach an amount (toward the last instalments) which gives a surprising and unforeseen shock to the purchaser buying his first car. Such a situation may correctly be placed in the shaded portion (on Chart 3) representing those unforeseen factors which cause repossessions. It is, however, not correctly placed as a permanently unpreventable cause. In purchasing his second car, this same purchaser would presumably take account of a possible increase in the upkeep and operating expenses. Granting the inability of the customer to foresee such possibilities, the responsibility is thrown on the dealer for not acquainting the customer with the facts, or at least for limiting credit to those who will be able to stand the increased cost. This would probably apply with especial emphasis in the case of purchases of used cars.

This suggests an approach to the whole problem of decreasing the results of depression upon collections. Bearing in mind that it is only the unforeseen factors which bring about the difficulties inherent in instalment selling, it follows that depression should affect repossessions only to the extent that it is unforeseen, or to the extent that it is more extreme than was anticipated.

Although the exact dependence of the instalment selling of automobiles upon general business conditions has not been established (and should be the object of a closer study and analysis), the existence of such a relationship is beyond the peradventure of doubt.

In order to prevent repossessions and losses from the unforeseen causes, therefore, it would be necessary to estimate the strength of the unforeseen factors—in short, to estimate the prospective business conditions. It must be admitted at once that despite all of the

excellent work along this line (by qualified private individuals and institutions, such as the Harvard Bureau, the Federal Reserve Bank, etc.), the accuracy of such estimates is questionable. And yet, in the absence of any accurate formal estimates, unstated estimates are being acted upon. There is a tendency for business in a time of prosperity to be carried on as if the good times were to continue at that pace. In other words, the unstated prediction is that business will, for the next twelve months (until instalments on present sales are paid), be at a high level. Conversely, in the trough of depression, the tendency is to make sales as though it were expected that business would continue at the low level of depression. The same line of reasoning might apply to different seasons of the year.

The finance company itself is the logical agency for such a study of general business conditions. This might well be carried on in conjunction with its own efforts to predict the volume of sales and with the efforts of the manufacturer to estimate the numbers of cars to produce.

The question raised here is whether or not these estimates might not be used in a more definite way (in regard to restrictions on credit extension) than is done at the present time.

The same work of estimating future conditions should be carried on in order to minimize the influence of local, as well as general, business conditions. The field organization could supplement the work of the parent company along this line. Carried even farther, it is necessary for the dealer himself to estimate the probable trend of local business conditions and especially of the particular industry on which the would-be purchaser

is dependent—another fact emphasizing the difficulty of the dealer's job and the necessity of obtaining business men of a high type for this work.

Whatever may actually result from such an attempt to estimate the trend of business, the conclusion which follows from the above is that here there is at least a possibility of results which might diminish repossessions and the other difficulties due to "unforeseen" causes. In other words, there is the possibility of foreseeing what was unforeseen, precisely as was suggested in the case of upkeep expenses.

The same possibility suggests itself in connection with factors which are unforeseen because of the fact that the purchaser may not have had any experience with instalment buying. The alleged increase in instalment buying, it may be hoped, will eventually educate and accustom the public to this form of buying, so that foolish buying, without weighing costs against what is to be gained from ownership, will diminish. In this connection, the policy of disclosing the actual cost of financing to the purchaser is to be preferred to the one of disguising financing charges as a part of the purchase price.

In answer to the question whether unforeseen factors necessarily bring about unpreventable delinquencies, repossessions and losses, we may now summarize our conclusions as follows:

Many of the factors which in the past were actually "unforeseen" do not necessarily have to remain so. The experience of the purchasers themselves with automobiles is placing at the disposal of every individual knowledge of what may be expected from the motor car and of what it will cost—knowledge which in the days when the automobile industry was in its infancy was unavailable even to the mechanic, and which, at a much later date, was susceptible of gross misrepre-

sentation. The same may be said of the knowledge of instalment selling.

When we turn to consider repossessions as caused by unforeseen changes in general (or local) business conditions, we encounter a problem of great proportion. But even here there is the possibility of improvement by means of estimating business conditions and adjusting credit policies accordingly. The seriousness of the difficulty of such an adjustment should decrease with each added year of experience. The magnitude of the problem will also be diminished by every step that is taken toward establishing business and by every improvement in statistical and economic technique that makes possible more accurate prediction.

For these reasons, we are probably justified in the conclusion that the factors leading to the unpreventable difficulties which arise from instalment selling will decrease in both numbers and importance, with the result that there are few undesirable factors (i.e., factors leading to delinquencies, repossessions and losses) which may be considered as permanently inherent in instalment selling; and in the further conclusion that the control of delinquencies, repossessions and losses lies in the hands of those selling on instalment. The presence of these losses does not necessarily indicate an abuse, for it may be desirable from the point of view of society, as well as of the individual concern, to carry on business in such a way that some losses would be possible. The above analysis merely suggests the extent to which the decision as to losses, etc., lies in the hands of the individual concern and is within its power to control.

APPENDIX SEVEN
THE DEPRESSION STUDY

Under the Direction of

RALPH WEST ROBY

LECTURER IN BANKING, COLUMBIA UNIVERSITY

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Part One

INTRODUCTION

1. Statement of the Problem

One of the large problems facing all of those whose business is directly connected with instalment sales is the problem of the effect of a period of depression upon payments. With this broad problem in mind, the anthracite coal area has been studied for the period from January 1, 1925, to September 1, 1926. For six months during this period the anthracite coal miners were on strike and the inhabitants of the area experienced a very marked decrease in their incomes.

It is not maintained that the condition prevailing at the time of the anthracite strike can be taken as exactly identical with that found in a period of business depression. It is believed, however, that the general tendencies would be the same in both circumstances.

In so far as the instalment payments are concerned, there are two major aspects of the problem arising out of a business depression. The first is concerned with the relationship between curtailment of income and promptness of payment on instalment accounts. This indicates the channel through which the effect of a strike or business depression will operate. The second aspect of the problem is concerned with the method which those engaged in the instalment business employ in meeting the situation caused by the changed economic conditions.

In the case of a finance company operating with a repurchase agreement or under a recourse plan, the two aspects are very distinct. In the records of such a finance company, the result of a business depression would be reflected in the trend of the delinquencies. The losses because of default on the part of purchasers of cars are not necessarily borne by these companies but are ordinarily absorbed by the dealers who have taken up the cars. From the records of finance companies, it is possible to arrive at an answer only to the first aspect of the problem facing the instalment business in a period of depression. The answer to the second problem—that is, the method of meeting the situation—is to be found in the losses of the individual dealers. It is only with the effect upon delinquencies that the present part of this study is to deal. To determine this, an analysis has been made of the payment history of all cars financed in the anthracite area by the General Motors Acceptance Corporation between January 1, 1925, and September 1, 1926. The results of this analysis are given in the following pages. The order of treatment is:

A. An examination of the business conditions of the anthracite area during the period under review. This is desirable in order to arrive at a conclusion as to the similarity between the situation prevailing in the anthracite area at the time of the strike and the conditions which would prevail in a period of business depression.
B. A statement of the automobile data upon which the investigation has been based.
C. A comparison of the promptness of payment in the anthracite district with that in the remainder of the General Motors Acceptance Corporation Philadelphia branch territory. This comparison is based on delinquencies as figured by calendar months.

D. An examination of delinquencies in the anthracite region based upon the actual number of days elapsing between the date of maturity of a note and the date of its payment.

E. A summary of the effect of the anthracite coal strike upon the relationship between curtailment of income and delinquencies; and also the conclusions in connection with the significance of the trends found.

2. Nature of the District Studied[1]

Before considering the data, it will be desirable to secure a general idea of the nature of the region studied. Three Pennsylvania counties, Lackawanna, Luzerne and Schuylkill, furnish the bulk of the anthracite produced in the United States. The annual production, which is spread fairly evenly throughout the year, is about 90,000,000 tons, valued at approximately $788,700,000. Of this, little more than 10 per cent is consumed within the territory. The industry employs 147,000 men, or nearly one-half of the male workers of the territory. The total population of the district is about 1,173,000 people. The miners with their families constitute half the population of the communities in which they live, and in some communities the miners and their families are responsible for almost all the purchases of consumers' goods. The miners receive annually in the form of wages over $210,000,000.

Factories, employing only about 69 per cent of the number of workers engaged in mining, are responsible for an annual production of manufactured goods valued at approximately $372,000,000. No small amount of this manufacturing is directly connected in one way or another with the anthracite industry. Since the mines

[1] The data in this section in connection with the nature of the anthracite district have been taken from the Department of Commerce, Domestic Commerce Series No. 1, *Commercial Survey of the Philadelphia Working District*, by J. Frederic Dewhurst, chief of the statistical division of the Federal Reserve Bank of Philadelphia.

are large consumers of machinery, heavy hardware, powder and explosives, the demand for these products has led to the establishment of such factories. Another type of industry is the subject of the following quotation:

> The availability for employment of the wives and daughters of the coal miners has led to the development in this region of important textile and textile products industries using female labor. Silk manufacture, the most important of these textile industries and, in fact, the most important individual manufacturing industry in this region, employs some 23,000 workers, 75 per cent of whom are women. Silk mills are found in nearly all the coal mining cities; in both Scranton and Wilkes-Barre the industry is the largest employer of labor. Shirts, underwear, and hosiery and knit goods, which are produced in large part by female labor, are also important manufactures in the coal mining cities. These and the other textile products industries, notably dyeing and finishing, and carpet manufactories employ in the aggregate nearly a third of the manufacturing wage earners in the anthracite mining region. The additions to the family income resulting from the employment of women in these industries has increased the miners' ability to conduct a strike successfully and also during these times of unemployment has had a stabilizing influence on retail trade. In addition to these industries there are, of course, a number of other important manufactures in this section. Scranton and Wilkes-Barre are important rail centers, and the railroads operate repair shops in these cities. Flour milling, printing and publishing, and the production of bread and other bakery products are of considerable importance largely in the supplying of local demands. With the continued growth of this region there has

> been a tendency toward the development of a more diversified manufacturing which is having a stabilizing influence upon industry and commerce.[1]

Less than 20,000 of the population are engaged in farming. The total value of crops and live stock is only 12 per cent of the value of anthracite.

The strike was called September 1, 1925, and was not settled until February 18, 1926. Inasmuch as two weeks' pay is withheld by the coal companies, it was March before the miners received their first regular pay. In other words, even though the whole district is not devoted to mining, there is to be found in this experience an instance where, for approximately six months, a large portion of the income of the community was completely eliminated. It should, therefore, offer a fertile field for a study indicating the possible effect of a business depression upon instalment payments.

[1] *Ibid.*, pp. 76-77.

Part Two

CONDITION OF THE DISTRICT STUDIED

1. Production of Anthracite

The anthracite coal strike was called for September 1, 1925. Production fell from 2,319,000 tons in the week ending August 29 to 432,000 tons for the week ending September 5, and to 5,000 tons for the week ending September 12. It remained at a few thousand tons for over five months. In other words, almost one-half of the total number of male workers in the district had their regular source of income completely stopped.

Table I gives the weekly production of anthracite as published by the weekly mimeographed bulletin of the Anthracite Bureau of Information of Philadelphia.

Chart 1 shows the above information graphically. The average weekly production is obtained by taking the total production of the weeks ending in any one month and dividing by the number of weeks of that month.

2. Number of Factory Wage-Earners

The numbers of wage-earners in factories in the two principal cities of the anthracite district, Scranton and Wilkes-Barre, show, in general, opposing trends. In Wilkes-Barre, the tendency from January, 1925, until

TABLE I

WEEKLY PRODUCTION OF ANTHRACITE (IN THOUSANDS OF TONS)

Year 1925

Jan.	3	1,255 tons
	9	1,785
	16	1,803
	23	1,740
	30	1,730
Feb.	6	1,909
	13	1,824
	20	1,838
	27	1,605
Mar.	6	1,655
	13	1,656
	20	1,513
	27	1,640
Apr.	3	1,438
	10	1,672
	17	1,522
	24	1,880
May	1	1,926
	8	1,987
	15	1,950
	22	1,708
	29	1,681
June	5	1,634
	12	1,825
	19	1,745
	26	1,800
July	3	1,800* tons
	10	1,809
	17	1,936
	24	1,999
	31	2,036
Aug.	1	2,087
	8	2,061
	15	1,904
	22	2,209
	29	2,310
Sept.	5	432
	12	5
	19	9
	26	13
Oct.	3	14
	10	13
	17	17
	24	13
	31	18
Nov.	7	28
	14	32
	21	46
	28	36
Dec.	5	62
	12	64
	19	55
	26	32

Year 1926

Jan.	3	28 tons
	9	47
	16	37
	23	47
	30	34
Feb.	6	27
	13	32
	20	406
	27	1,609
Mar.	6	1,789
	13	1,966
	20	1,963
	27	1,991
Apr.	3	1,549
	10	1,793
	17	2,086
	24	2,087
May	1	2,098 tons
	8	1,985
	15	1,904
	22	1,750
	29	2,088
June	5	1,678
	12	2,083
	19	2,032
	26	2,087
July	3	1,970
	10	1,545
	17	1,979
	24	1,940
	31	2,066
Aug.	7	1,843
	14	1,937
	21	1,782
	28	1,999

* Estimated.

the end of the strike was, with the exception of two months, distinctly upward. In this period, there was a thirty per cent increase in the number of factory wage-earners. In Scranton, the general tendency was downward, although the decrease during the same period was less than ten per cent. Both localities, however, appear to show some effects of the strike. Wilkes-Barre shows a greater rapidity of increase with the beginning of the strike, and in Scranton not only is the decline halted at

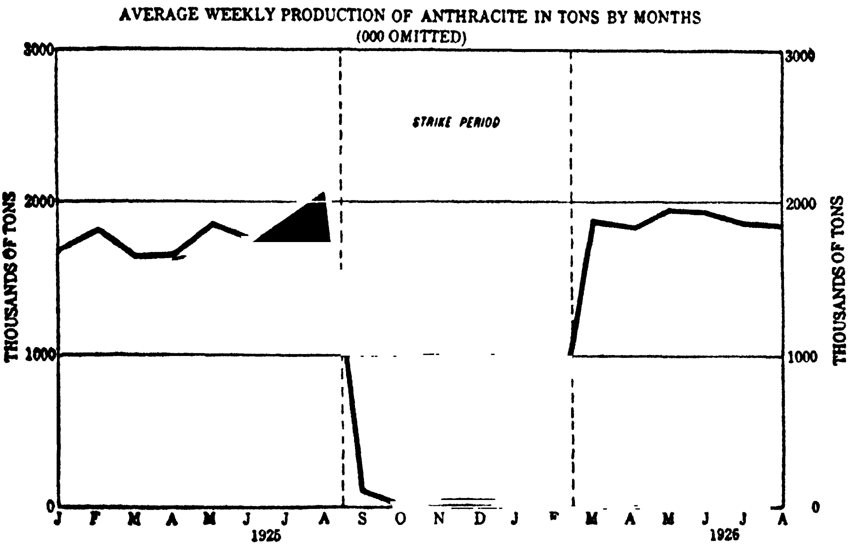

CHART I

the beginning of the strike, but there is a slight increase between this date and January, 1926, after which the decline becomes rapid.

It is not probable, however, that the increased number of factory employees was drawn to any appreciable extent from the miners. In the first place, the union would discourage members from seeking employment elsewhere, and, secondly, it is doubtful if more than a small percentage of the men would be able to shift to factory occupations with facility. It is possible, how-

TABLE II

INDEX OF NUMBER OF FACTORY WAGE-EARNERS IN SELECTED CENTERS BETWEEN JANUARY, 1923, AND AUGUST, 1926*

(*1923 = 100*)

Period of Time		Anthracite Region		Neighboring Centers	
		Scranton	Wilkes-Barre	Reading	Allentown, Bethlehem and Easton
1923	Jan.	97.3	102.1	105.3	97.9
	Feb.	97.7	104.9	106.7	99.1
	Mch.	103.3	107.9	108.2	101.2
	Apr.	105.5	110.3	102.6	97.2
	May	104.2	102.3	101.9	101.3
	June	102.8	98.4	101.3	101.1
	July	105.9	101.9	93.8	100.8
	Aug.	101.7	99.3	93.5	101.0
	Sept.	97.1	95.4	100.6	100.2
	Oct.	94.7	93.9	98.5	101.4
	Nov.	95.1	93.9	93.9	99.9
	Dec.	94.7	89.7	93.7	98.9
1924	Jan.	96.3	93.5	89.6	99.6
	Feb.	98.2	98.7	95.8	102.2
	Mch.	97.4	97.2	98.2	97.3
	Apr.	94.1	94.2	95.9	95.5
	May	88.6	87.8	89.2	95.4
	June	81.4	86.2	86.9	94.2
	July	74.2	90.2	72.1	91.4
	Aug.	78.1	93.4	79.2	93.7
	Sept.	80.9	92.7	82.1	93.4
	Oct.	85.3	96.7	85.5	94.9
	Nov.	87.8	99.3	87.3	95.4
	Dec.	89.6	97.5	92.5	94.5
1925	Jan.	89.3	99.5	91.2	95.3
	Feb.	92.0	101.1	94.7	98.1
	Mch.	90.2	103.9	94.2	97.5
	Apr.	89.8	106.7	91.2	97.0
	May	87.7	108.8	89.5	99.0
	June	87.7	107.2	89.1	100.6
	July	89.0	113.8	80.5	101.5
	Aug.	91.5	114.0	83.1	101.4
	Sept.	81.7	114.6	87.5	101.2
	Oct.	82.5	122.3	90.9	102.9

* Compiled and furnished through the courtesy of the Federal Reserve Bank at Philadelphia.

TABLE II (*Continued*)

Period of Time	Anthracite Region		Neighboring Centers	
	Scranton	Wilkes-Barre	Reading	Allentown, Bethlehem and Easton
Nov.	83.8	127.3	92.4	100.7
Dec.	83.2	129.2	93.6	100.7
1926 Jan.	84.7	124.7	83.0	99.7
Feb.	80.8	129.9	95.3	102.6
Mch.	80.2	126.8	95.9	101.2
Apr.	76.8	126.8	94.5	100.9
May	68.0	117.0	93.9	100.0
June	71.1	112.9	92.8	102.2
July	69.1	115.5	91.8	100.8
Aug.	67.2	117.1	94.2	101.2

ever, that a part of the increase was due to the fact that an additional number of the wives and daughters of miners sought employment.

In Table II is given an index of the number of factory wage-earners in Scranton and Wilkes-Barre and, for comparison, in centers outside the anthracite region.

Chart 2 shows the trend of factory employment between January, 1925, and August, 1926, in Scranton and Wilkes-Barre.

3. Volume of Retail Sales

The extent of the strike is shown clearly in the volume of retail trade sales. In Scranton, the volume for the first eight months had been, on the average, about equal to that of the preceding year. With the outbreak of the strike, sales fell below those of the preceding year and continued at a lower level until March, 1926. In the first two months of the strike, however, the discrepancy was not great. In November, the third month, sales were 6 per cent lower than for the same month in 1924,

and in December the index number was 16 points lower than that for December, 1924. In January and February, 1926, the index numbers were 13 and 16 points below the same months of 1925. From March to August, 1926, the index stood continuously above the same period of the preceding year.

NUMBER OF FACTORY WAGE EARNERS
(1923=100)

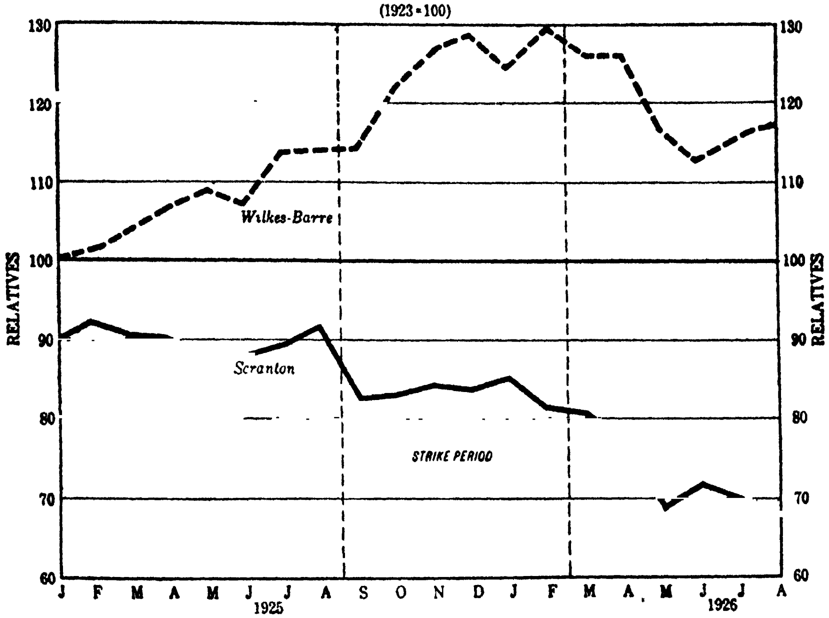

CHART 2

In Wilkes-Barre, a similar condition was found. The sales for the first eight months were in general below those of the comparable period of 1924. The index number for August, 1925, or the month before the strike, was one point below that for the same month in 1924. In September, the index number was 4 points below that of a year earlier, in October 5 points, in November 18 points, in December 25 points, in January 21 points, in February 16 points, and in March 5 points. April, 1926, again showed a great drop, but thereafter sales more nearly approached the usual volume.

TABLE III

INDEX OF VOLUME OF RETAIL SALES IN SELECTED CENTERS FROM JANUARY, 1923, TO AUGUST, 1926 *

(*1923 = 100*)

Period of Time		Anthracite Region		Neighboring Centers	
		Scranton	Wilkes-Barre	Reading	Allentown, Bethlehem and Easton
1923	Jan.	67.9	79.0	77.9	75.4
	Feb.	62.8	65.9	81.5	74.5
	Mch.	121.6	116.4	106.7	112.4
	Apr.	98.4	96.8	101.0	92.0
	May	109.0	109.9	104.0	106.6
	June	107.9	103.6	99.8	104.1
	July	76.4	72.9	76.1	78.8
	Aug.	73.8	70.5	82.7	78.7
	Sept.	82.8	81.4	78.2	84.2
	Oct.	112.2	112.9	101.8	105.1
	Nov.	120.9	117.6	112.3	135.7
	Dec.	166.3	173.1	178.0	152.5
1924	Jan.	79.9	83.7	90.7	84.1
	Feb.	68.6	75.4	86.0	87.0
	Mch.	96.4	95.4	87.3	103.2
	Apr.	130.8	124.0	117.4	112.7
	May	99.2	114.2	108.4	105.2
	June	96.5	102.5	81.6	95.4
	July	76.8	80.6	76.7	82.5
	Aug.	74.8	77.6	76.0	76.2
	Sept.	80.9	82.4	69.2	79.9
	Oct.	109.8	112.6	91.6	101.6
	Nov.	114.0	115.0	110.7	138.5
	Dec.	165.3	174.7	176.9	153.6
1925	Jan.	74.8	86.5	85.0	81.7
	Feb.	71.7	71.3	85.8	86.6
	Mch.	97.9	96.7	88.9	108.3
	Apr.	115.6	114.3	115.6	108.8
	May	94.2	107.9	99.4	102.3
	June	100.1	102.4	83.4	95.8
	July	70.3	75.8	75.2	78.5
	Aug.	71.3	76.6	82.8	83.9
	Sept.	76.4	77.5	69.8	83.2
	Oct.	105.8	107.1	106.3	116.2

* These series were computed and supplied by the Federal Reserve Bank of Philadelphia.

TABLE III (*Continued*)

Period of Time		Anthracite Region		Neighboring Centers	
		Scranton	Wilkes-Barre	Reading	Allentown, Bethlehem and Easton
	Nov	97 7	96.3	101 2	134.6
	Dec	148.6	150.2	174.8	157.9
1926	Jan	61.6	65.0	102.9	89.7
	Feb	55.8	54.7	73.0	77.9
	Mch	98.1	92 2	92.3	112.4
	Apr	124 4	100.9	103 9	104 6
	May	114 7	115.1	98.2	106.0
	June	100.7	96.5	81.9	92.6
	July	86.3	77 3	75.7	86.5
	Aug	85 7		75.3	

That the decrease in sales was in large measure the result of the strike is clearly shown by a comparison with other centers outside the district. In Reading, the index for December, 1925, was 175 as compared with 177 for December, 1924, while in Allentown, Bethlehem, and Easton, combined, it was 158 as compared with 154.

In Table III are given index numbers which indicate the volume of retail trade sales in the anthracite region and the surrounding area.

Chart 3 shows graphically the variations in Scranton and Wilkes-Barre sales from January, 1925, to August, 1926.

An index of the volume of sales, during the strike period, of representative stores in the anthracite region which sell on instalments shows a still greater variation from that of the comparable months a year earlier. Although during the first eight months of 1925, their sales had been below those of 1924, in November and December, 1925, the difference amounted to 37 points in the index numbers. It was not until June, 1926, that

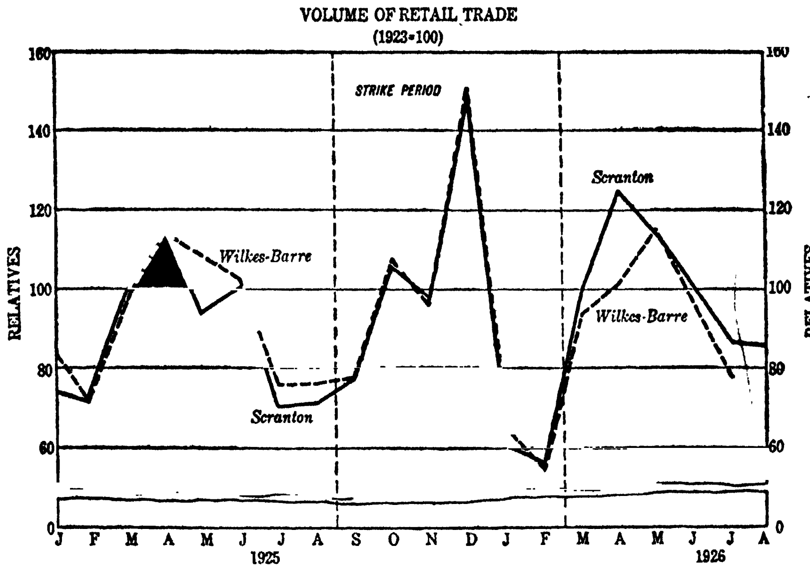

CHART 3

the index number was even equal to that of the same month of the preceding year.

TABLE IV

INDEX OF VOLUME OF SALES OF CREDIT STORES IN ANTHRACITE DISTRICT

(1923=100)

	1923	1924	1925	1926
Jan.	68 7	69.9	57.7	37.1
Feb.	63.9	70.6	64.9	44.6
Mch.	103.9	82.2	78.3	75.4
Apr.	119.6	127.4	111.3	110.9
May	122.8	119.4	115.8	112.8
June	101.0	89.4	94.0	85.0
July	73.5	73.2	64.1	67.4
Aug.	67.0	79.3	55.6	61.9
Sept.	73.8	77.4	61.2	
Oct.	117.0	107.2	82.6	
Nov.	124.0	115.2	77.7	
Dec.	164.1	168.6	131.5	

Chart 4 presents the above statistics for 1925 and 1926 in graphic form.

VOLUME OF SALES OF CREDIT STORES IN ANTHRACITE DISTRICT
(1923 = 100)

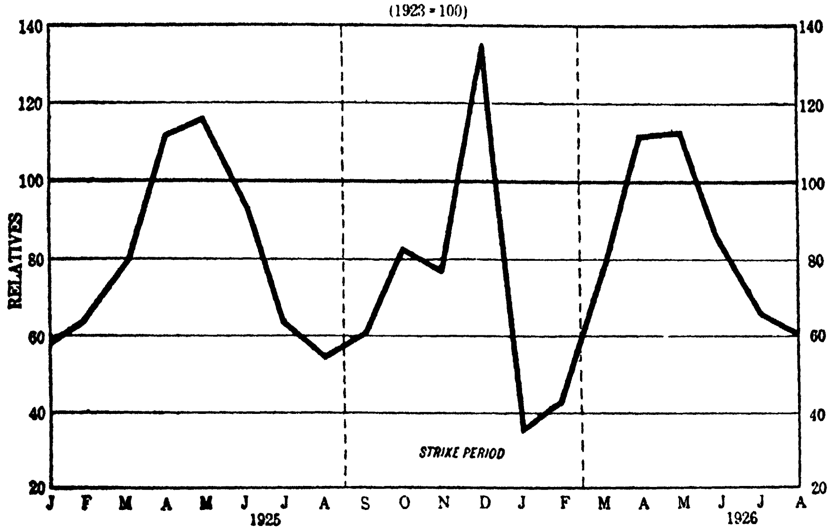

CHART 4

4. Bank Debits

Debits to individual accounts in Scranton showed an immediate effect of the strike. Whereas in only two of the first eight months of 1925 had they been less than in the corresponding months in 1924, they took a disproportionate drop in September, 1925. In this month, the index was 5 points lower than in the same month of 1924. In October, the difference had increased to 10 points; in November, to 15 points; and in December, to 20 points. In January and February, 1926, the differences, as compared with corresponding months in 1925, were 19 and 17 points respectively. From March to August, 1926, they again were commonly above the 1925 figures.

In Wilkes-Barre, debits show a slightly different trend. In 1925, before the strike, they were, with the exception

TABLE V

INDEX OF BANK DEBITS IN SELECTED CENTERS
1923–1926 *
(*1923 = 100*)

Period of Time		Anthracite Region		Neighboring Centers	
		Scranton	Wilkes-Barre	Reading	Allentown, Bethlehem and Easton
1923	Jan.	105.4	96.1	98.1	95.3
	Feb.	88.4	78.2	81.8	77.1
	Mch.	103.4	97.8	100.4	101.1
	Apr.	96.4	95.8	104.6	105.4
	May	103.9	100.1	110.8	108.8
	June	104 9	104.2	107.3	111.5
	July	111.2	101.6	99.2	99.6
	Aug.	95.8	98.0	103 5	93.2
	Sept.	84 7	89.6	89.4	96.7
	Oct.	101 8	107.8	103.4	112.6
	Nov.	95.5	111.4	95.1	93.5
	Dec.	107.7	119.2	106.4	105.1
1924	Jan.	101.8	109 5	107.6	99.6
	Feb.	103.7	106.7	92 4	91.8
	Mch.	101.6	106.6	93.1	103.8
	Apr.	101.0	116.0	85.5	108.5
	May	100 7	109.5	95.4	102.4
	June	100.0	118.8	89.2	108.0
	July	104.5	112.4	92.4	109.4
	Aug.	91.7	101.4	85.3	99.9
	Sept.	101.2	105.3	84.2	105.5
	Oct.	108.3	118.1	87.9	117.8
	Nov.	93.7	106.4	81.2	102.0
	Dec.	108.1	130.6	102.1	118.3
1925	Jan.	112.4	123.1	94.1	110.3
	Feb.	90.4	105.5	70.9	96.5
	Mch.	105.0	110.5	81.4	114.9
	Apr.	101.6	117.5	97.8	120.6
	May	98.8	115.4	97.6	120.5
	June	111.1	122.7	90.1	122.4
	July	104.6	121.1	100.9	126.2
	Aug.	99.2	113.6	105.9	119.9
	Sept.	96.5	105.6	105.0	117.5
	Oct.	98.7	113.2	115.5	139.2

* Computed and furnished by the Federal Reserve Bank of Philadelphia.

TABLE V (*Continued*)

Period of Time	Anthracite Region		Neighboring Centers	
	Scranton	Wilkes-Barre	Reading	Allentown, Bethlehem and Easton
Nov.	79.1	94.7	106.5	119.8
Dec.	87.7	107 0	119.0	141.2
1926 Jan.	93.4	97.0	112.2	134.9
Feb.	73.5	79 2	96.7	108.0
Mch.	108.4	108.8	115.2	128.8
Apr.	104.8	113 1	113.8	136.6
May	97.7	107.2	115.4	123.5
June	103 0	105 4	113.3	124.6
July	106 7	109.4	117.9	136.5
Aug.	102.9	108.0	104.7	118.9

of one month, higher than in 1924. For September, 1924, and September, 1925, they were practically the same; but thereafter during the strike months the index numbers were lower than for the same months a year earlier. In October the difference was 5 points, in November 11 points, in December 24 points, in January 26 points, and in February 26 points. After the settlement of the strike, the difference was greatly lessened; but the 1926 figures continue below those for 1925.

Bank debits in Reading and Allentown show, in all the months of the strike, a considerable gain over the same months a year earlier. It would, therefore, appear possible to ascribe virtually all of the decline in Scranton and Wilkes-Barre to the strike.

In Table V is given a series of index numbers for the volume of bank debits in Scranton and Wilkes-Barre and in neighboring centers from January, 1923, to August, 1926.

Bank debits for Scranton and Wilkes-Barre from January, 1925, to August, 1926, are shown on Chart 5.

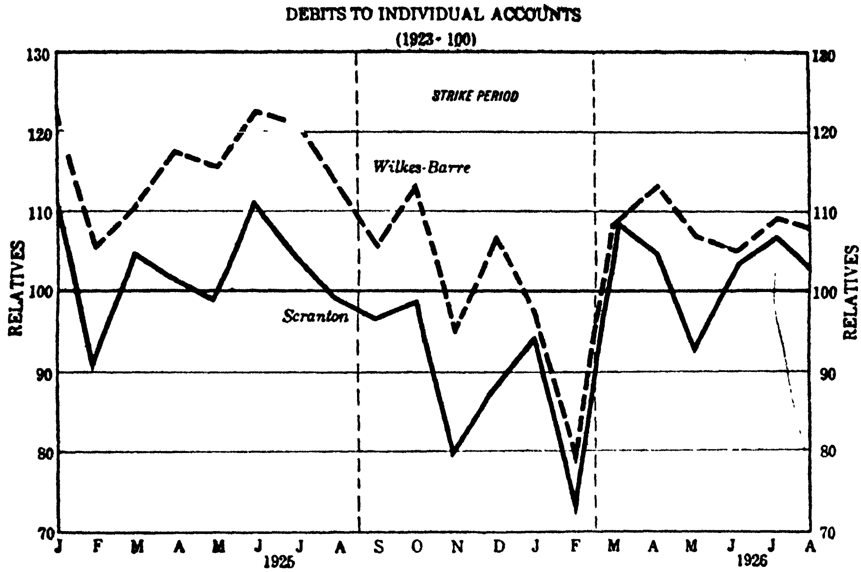

CHART 5

5. Bank Clearings

The trend of bank clearings may be expected to follow very closely the trend of bank debits. In the combined clearings for Scranton and Wilkes-Barre, the downward tendency began in July, 1925, and continued, with few interruptions, until March, 1926. While the total drop in this period was severe—namely, from $46,401,595 to $34,055,611—no small part of it is to be ascribed to the usual seasonal movement in clearings and to the fact that February is a short month. It may be noted, nevertheless, that the volume of clearings in February, 1926, was about five and a half millions less than for February, 1925. In Table VI are given the clearings for Scranton and Wilkes-Barre from January, 1925, to August, 1926. Chart 6 shows the combined clearings of the two cities.

6. Savings Deposits

An index of savings deposits is expected to advance more or less continuously unless there is some curtail-

TABLE VI

BANK CLEARINGS IN SCRANTON AND WILKES-BARRE—JANUARY, 1925, TO AUGUST, 1926 *

		Scranton	Wilkes-Barre	Total
1925	Jan.	$30,620,946	$16,854,566	$47,475,512
	Feb.	23,291,975	16,379,524	39,671,499
	Mch.	26,508,697	17,609,415	44,118,112
	Apr.	26,482,345	18,225,416	44,707,761
	May	26,298,541	17,634,718	43,933,259
	June	27,557,070	18,840,555	46,397,625
	July	29,376,017	17,225,578	46,601,595
	Aug.	25,420,360	17,948,118	43,368,478
	Sept.	25,501,344	16,725,555	42,226,899
	Oct.	27,769,051	17,156,432	44,925,483
	Nov.	24,268,470	16,386,387	40,654,857
	Dec.	25,645,212	17,043,704	42,698,916
1926	Jan.	28,184,205	16,200,000	44,384,205
	Feb.	21,997,868	12,057,743	34,055,611
	Mch.	27,603,573	15,373,975	42,977,548
	Apr.	27,796,157	16,306,858	44,103,015
	May	25,784,780	16,972,508	42,757,288
	June	26,907,903	15,433,284	42,341,187
	July	28,213,687	16,614,517	44,828,204
	Aug.	27,056,139	15,094,885	42,151,024

* Figures for Scranton furnished by the Scranton Chamber of Commerce; those for Wilkes-Barre by the Clearing House Association.

ment in the income of the district to which the statistics refer. Accordingly, in Scranton, the index rose from 96 in January, 1923, to 108 in January, 1924, and then to 126 in January, 1925. In July, 1925, it was 127, the highest point it had yet reached. Thereafter, it started to decline and in December of the same year was 123. In Scranton, a sudden jump in savings in January is customary. For example, January, 1924, marked an increase of 5 points over December, 1923, and January, 1925, an increase of 8 points over December, 1924. This peculiarity continued in the midst of the strike and in January, 1925, the index registered an increase

of 7 points over the preceding month. Thereafter, it started a decline which reached 123 in May.

In Wilkes-Barre, there was no appreciable decrease in the volume of savings deposits until October, 1925. From this date on, there came a steady decline through May, the index falling in this period from 125 to 116.

Some indication of the gross effect of the strike in these cities may be obtained by a comparison with

BANK CLEARINGS OF WILKES-BARRE AND SCRANTON
(COMBINED FIGURES)

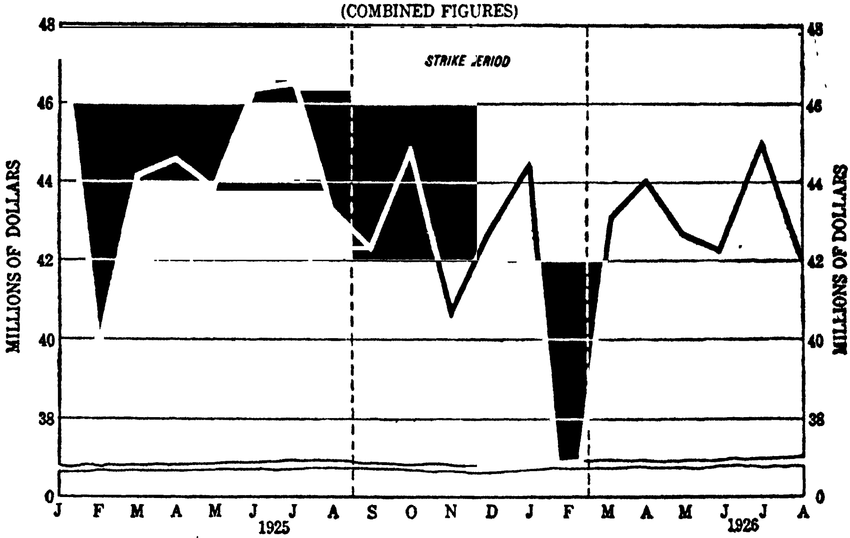

CHART 6

Reading. Using the average of 1923 as equal to 100 in all cases, it is found that, by December, 1924, the increase had been to 118, 119, and 119 in Scranton, Wilkes-Barre, and Reading, respectively. By the outbreak of the strike, the index numbers, in the same order, stood 125, 125 and 134. In the month following the termination of the strike, the index for Scranton was 129, for Wilkes-Barre 118, and for Reading, 145.

In Table VII are given the index numbers for the three cities mentioned from January, 1923, to August, 1926.

TABLE VII

INDEX OF SAVINGS DEPOSITS IN SELECTED CENTERS—JANUARY, 1923, TO AUGUST, 1926*

(*1923=100*)

Period of Time		Anthracite Region		Neighboring Centers
		Scranton	Wilkes-Barre	Reading
1923	Jan.	96.2	90.4	95.8
	Feb.	91.9	91.8	95.2
	March	95.0	93.5	94.9
	April	97.3	93.7	95.4
	May	100.9	94.9	94.1
	June	101.7	94.8	99.8
	July	101.2	96.9	103.1
	Aug.	103.2	108.0	104.2
	Sept.	103.7	108.8	103.2
	Oct.	102.2	108.5	104.0
	Nov.	102.8	108.6	103.5
	Dec.	103.4	109.7	106.5
1924	Jan.	108.5	111.1	108.7
	Feb.	110.4	111.3	109.0
	March	110 4	112.1	110.7
	April	112.4	111.7	110.7
	May	112.4	111.9	109.3
	June	111.5	112.1	110.5
	July	113.7	112.7	113.5
	Aug.	114.2	113.5	112.0
	Sept.	115 0	113.4	117.6
	Oct.	113.4	114.7	118.7
	Nov.	117.9	115.8	115.3
	Dec.	118.0	119.0	119.0
1925	Jan.	126.5	120.7	124.2
	Feb.	126.6	123.2	125.5
	Mch.	125.2	122.6	124.7
	Apr.	125.2	122.7	123.3
	May	124.8	123.1	124.1
	June	125.0	123.1	124.5
	July	126.9	124.1	133.6
	Aug.	125.2	124.6	133.7
	Sept.	124.3	124.6	139.0
	Oct.	124.2	122.5	134.0
	Nov.	124.3	122.1	133.1
	Dec.	123.0	120.8	134.0

* Computed and supplied by the Federal Reserve Bank of Philadelphia.

TABLE VII (*Continued*)

Period of Time	Anthracite Region		Neighboring Centers
	Scranton	Wilkes-Barre	Reading
1926 Jan.	130.1	120 7	137.6
Feb.	129.0	118.6	145.0
Mch.	129.0	118.5	145.0
Apr.	124.5	117.6	144.2
May	123.1	116.2	142.9
June	123.5	117.7	140.3
July	125.3	120.7	136.9
Aug.	128.8	120.4	135.6

Chart 7 shows graphically the movement of savings deposits in Scranton and Wilkes-Barre for 1925 and 1926.

7. Conclusions

The statistics presented in the preceding pages, while by no means exhaustive, may be taken as indicative of the condition of business in the anthracite region for the period of the strike. In every instance, a more or less decided effect of the strike has been noted. Anthracite production was, of course, almost completely stopped. The number of factory wage-earners in Wilkes-Barre showed an increase of about twenty-five per cent over the preceding year, while in Scranton the decline which had been going on for over a year was stopped, and during the first five months of the strike there was an increase of four or five per cent. The volume of retail trade declined, on the average, from five to ten per cent from that of the same period in the preceding year and the volume of sales in credit stores declined approximately one-fourth from that of the comparable months a year earlier. Bank debits declined from ten to twenty per cent, while bank clearings were a few million less a

month than a year earlier. Savings deposits not only failed to increase, with the exception of the first-of-the-year increase in Scranton, but showed a more or less steady decline, amounting, however, to only a small percentage.

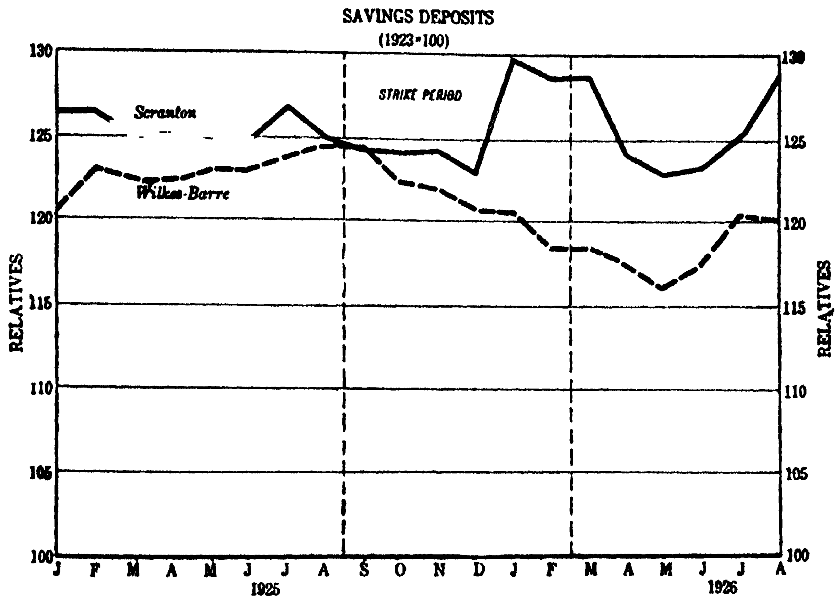

CHART 7

In a view of the above, it is not correct to consider the anthracite strike period as an absolutely accurate indication of conditions in a business depression. Rather, it should be looked upon as having caused a more decided curtailment of income than is likely to occur in other than a very severe depression. It would be a most unusual situation to have one-half the population out of work. The effects of depression on installment payments should, therefore, be more sharply revealed in the anthracite strike period than in any depression this country is likely to experience.

Part Three

AUTOMOBILE DATA UPON WHICH THE STUDY IS BASED

In the following pages is presented a comparison of the experience on automobile paper in the anthracite region with the experience in the remainder of the territory covered by the Philadelphia branch of the General Motors Acceptance Corporation. The towns included in the anthracite region were as follows:

Ashland	New Philadelphia
Berwick	Old Forge
Bloomsburg	Orwigsburg
Bowmanstown	Parsons
Carbondale	Pecksville
Dallas	Pittston
Eynon	Plymouth
Forest City	Pottsville
Glenlyon	Reinerton
Halifax	Rock Glenn
Hazleton	Schuylkill Haven
Honesdale	Scranton
Kingston	Shamokin
Lehighton	Shenandoah
Luzerne	Starlight
Lykens	Summit Hill
Mahanoy City	Tamaqua
McAdoo	Tremont
Minersville	West Pittston
Mt. Carmel	Wilkes-Barre
Nanticoke	Wyoming

The amount of paper bought from the dealers in the anthracite district in each of the months under consideration is shown in the following summary:

SUMMARY

	1924	1925	1926
Jan.	$———	$ 4,690.64	$ 33,637.60
Feb.	———	14,383.23	18,111.42
Mch.	———	31,956.26	103,183.58
Apr.	———	51,112.68	192,905.38
May	———	43,297.53	229,165.47
June	———	47,655 04	263,961.83
July	———	38,246.42	239,641.60
Aug.	55,571.40	31,263.86	
Sept.	40,561.63	49,850.55	
Oct.	24,453 22	47,911.12	
Nov.	21,885.16	33,096.06	
Dec.	9,225.18	43,440 91	

The distribution of maturities of each month's purchases from anthracite district dealers is given in Table VIII.

The distribution of collections according to the month in which they were due is shown in Table IX.

The amount due in each month in the Philadelphia district other than the anthracite region, together with the payments from August, 1924, to August, 1926, is shown in Table X. These figures were obtained by taking the total branch figures and subtracting from them the maturities and payments of the anthracite region.

TABLE VIII

DISTRIBUTION OF MATURITIES IN ANTHRACITE REGION

Maturities Month of Purchase	1924 Aug.	1924 Sept.	1924 Oct.	1924 Nov.	1924 Dec.	1925 Jan.
1924 Aug....	447.71	4,875.87	4,875.87	4,875.87	4,774.87	4,774.87
Sept....		702.03	3,648.01	3,648.01	3,648.01	3,648.01
Oct....			329.00	2,297.96	2,297.96	2,256.96
Nov....				71.72	2,020.17	2,020.17
Dec....					182.82	753.35
1925 Jan.....						242.07
Feb....						
Mch...						
Apr....						
May...						
June...						
July....						
Aug....						
Sept....						
Oct....						
Nov....						
Dec....						
1926 Jan.....						
Feb....						
Mch...						
Apr....						
May...						
June...						
July....						
Aug....						
Total......	447.71	5,577.90	8,852.88	10,893.56	12,923.83	13,695.43

TABLE VIII (*Continued*)

Maturities Month of Purchase		1925 Feb.	1925 Mch.	1925 Apr.	1925 May	1925 June	1925 July
1924	Aug....	4,774.92	4,714.57	4,714.61	4,465.10	4,333.16	4,117.33
	Sept....	3,530.01	3,501.05	3,350.65	3,266.65	3,155.92	3,075.57
	Oct....	2,183.96	2,183.96	2,080.97	1,983.97	1,954.01	1,879.65
	Nov....	2,020.17	2,020.17	2,020.17	1,932.20	1,786.58	1,752.88
	Dec....	753.35	1,786.35	753.35	753.38	726.64	691.16
1925	Jan.....	510.71	510.71	510.71	382.36	382.39	355.64
	Feb....	41.68	1,319.34	1,319.34	1,319.34	1,319.34	1,319.34
	Mch...		134.46	2,793.20	2,793.20	2,793.20	2,793.20
	Apr....			500.37	4,515.09	4,515.09	4,515.09
	May...				616.02	4,051.12	4,051.12
	June...					375.62	4,215.17
	July...						554.88
	Aug....						
	Sept....						
	Oct....						
	Nov....						
	Dec....						
1926	Jan.....						
	Feb....						
	Mch...						
	Apr....						
	May...						
	June...						
	July....						
	Aug....						
Total......		13,814 80	16,170.61	18,043.37	22,027.31	25,493.07	29,321.03

TABLE VIII (*Continued*)

Maturities Month of Purchase	1925 Aug.	1925 Sept.	1925 Oct.	1925 Nov.	1925 Dec.
1924 Aug....	3,726.65				
Sept....	2,987.67	2,400.04			
Oct.....	1,879.65	1,674.13	1,451.04		
Nov....	1,715.79	1,675.69	1,443.70	1,405.75	
Dec.....	691.20	608.45	593.53	543.90	387.70
1925 Jan.....	355.64	355.64	355.64	314.64	250.74
Feb.....	1,319.36	1,257.18	1,189.50	1,125.30	1,125.32
Mch....	2,770.20	2,770.20	2,728.20	2,728.20	2,728.20
Apr.....	4,515.09	4,431.51	5,311.00	4,210.16	4,187.16
May....	4,051.12	4,051.12	4,051.12	3,876.15	3,416.57
June....	4,215.17	4,215.19	4,163.45	4,163.45	4,163.49
July....	3,312.69	3,312.69	3,312.69	3,312.69	3,312.69
Aug....	314.94	2,743.98	2,743.99	2,690.55	2,642.21
Sept....		1,340.16	4,499.53	4,499.53	4,499.53
Oct.....			703.66	4,276.05	4,276.05
Nov....				226.35	3,238.44
Dec.....					888.01
1926 Jan.....					
Feb.....					
Mch....					
Apr.....					
May....					
June....					
July....					
Aug....					
Total.......	31,855.17	30,815.98	32,547.05	33,372.72	35,116.11

TABLE VIII (*Continued*)

Maturities Month of Purchase	1926 Jan.	1926 Feb.	1926 Mch.	1926 Apr.	1926 May
1924 Aug....					
Sept....					
Oct.....					
Nov....					
Dec.....					
1925 Jan.....	163.75				
Feb.....	864 08	864.11			
Mch....	2,678.20	2,190.13	2,055.67		
Apr.....	4,038.53	4,020.61	3,400.11	2,952.73	
May....	3,324.58	3,143.82	3,143.86	2,949.87	2,571.06
June....	4,423.93	3,803.75	3,566.79	3,474.38	3,231.57
July....	3,259.84	3,241.82	3,241.86	3,194.85	3,113.50
Aug....	2,589.21	2,589.29	2,492.39	2,492.47	2,386.15
Sept....	4,499.53	4,413.04	4,315.05	4,082.84	4,082.88
Oct.....	4,276.05	4,254.55	4,175.09	4,049.55	3,983.39
Nov...	3,238.44	2,854.94	2,856.94	2,856.96	2,834.66
Dec. ...	3,698.01	3,822.42	3,822.42	3,795.30	3,742.52
1926 Jan.....	783.57	2,882.74	2,859.74	2,915.49	2,859.74
Feb. ...		309.16	1,581.27	1,618.72	1,619.72
Mch....			521.93	9,336.36	9,349.81
Apr.....				2,199.02	17,386.11
May....					3,056.98
June....					
July....					
Aug....					
Total.......	37,837.72	38,392.38	38,033.12	45,919.54	60,218.09

TABLE VIII (*Continued*)

Maturities Month of Purchase	1926 June	1926 July	1926 Aug.	Subsequent	Total
1924 Aug. . .					55,571.40
Sept. . .					40,561.63
Oct. . . .					24,453.22
Nov. . .					21,885.16
Dec. . . .					9,215.18
1925 Jan. . . .					4,690.64
Feb. . . .					14,383.23
Mch. . .					31,956.26
Apr. . . .					51,112.54
May . . .					43,297.53
June. . .	2,998.31	107.44	107.44	429.89	47,655.04
July . . .	2,748.56	2,327.86			38,246.62
Aug. . .	2,374.80	2,285.79	1,983.05	935.04	31,263.86
Sept. . .	3,958.22	3,824 62	3,481.69	2,373.93	49,850.55
Oct. . . .	3,941 13	3,821.93	3,821.70	6,331.97	47,911.12
Nov. . .	2,692.80	2,616.59	2,602.22	7,075.52	33,096.06
Dec. . .	3,742.57	3,539.55	3,503.07	12,887.04	43,440.91
1926 Jan. . . .	2,832.28	2,817.18	2,687.60	12,999.26	33,637.60
Feb. . . .	1,619.72	1,525.47	1,525.47	8,310.89	18,111.42
Mch. . .	9,636.89	9,321.49	8,855.29	56,161.81	103,183.58
Apr. . . .	17,155.48	17,155.48	17,155.48	121,853.81	192,905.38
May . . .	20,190.39	20,354.13	20,122.13	165,441.84	229,165.47
June. . .	4,626.16	23,795.32	23,429.05	212,111.30	263,961.83
July . . .		4,477.87	21,338.09	213,825.64	239,641.60
Aug. . .					
Total.	78,517.31	97,970.72	110,612.28	820,737.94	1,669,207.83

TABLE IX

DISTRIBUTION OF COLLECTIONS IN THE ANTHRACITE REGION

Collections:		1924 Aug.	1924 Sept.	1924 Oct.	1924 Nov.	1924 Dec.	1925 Jan.
1924	Aug....	275.68	134.76	60.00	60.00	60.00	60.00
	Sept....	129.03	4,767.46	485.19	278.54	196.66	196.66
	Oct....	43.00	632.68	7,540.29	915.07	278.88	278.88
	Nov....			505.72	8,272.52	291.57	154.57
	Dec....		43.00	93.00	950.42	10,014.26	674.57
1925	Jan.....			43.68	204.01	1,532.07	10,392.77
	Feb....			125.00	177.00	515.39	1,550.69
	Mch...				36.00	35.00	319.29
	Apr....						68.00
	May...						
	June...						
	July....						
	Aug....						
	Sept....						
	Oct....						
	Nov....						
	Dec....						
1926	Jan.....						
	Feb....						
	Mch...						
	Apr....						
	May...						
	June...						
	July....						
	Aug....						
Unpaid*......							
Total......		447.71	5,577.90	8,852.88	10,893.56	12,923.83	13,695.43

TABLE IX (*Continued*)

Collections:	1925 Feb.	1925 Mch.	1925 Apr.	1925 May	1925 June
1924 Aug....	60.00	60.00	60.00	60.00	60.00
Sept....	196.66	196.66	196.66	196.66	196.66
Oct.....	278.88	191.88	191.88	191.88	191.88
Nov....	121.57	121.57	121.57	121.57	121.57
Dec.....	264.95	276.95	189.95	189.95	189.95
1925 Jan.....	619.38	260.87	232.87	232.87	232.87
Feb.....	9,878.41	766.82	348.55	348.55	275.89
Mch....	2,121.60	12,095.96	1,170.54	286.00	236.00
Apr.....	205.35	1,911.27	12,623.29	411.81	108.75
May....	68.00	185.63	2,546 56	16,023.66	920.83
June....		103.00	214.59	3,470.12	19,487.00
July....			146.91	426.24	3,156.07
Aug....				68.00	212.60
Sept....					35.00
Oct.....					68.00
Nov....					
Dec.....					
1926 Jan.....					
Feb.....					
Mch....					
Apr.....					
May....					
June....					
July....					
Aug....					
Unpaid*......					
Total.......	13,814.80	16,170.61	18,043.37	22,027.31	25,493.07

TABLE IX (*Continued*)

Collections:		1925 July	1925 Aug.	1925 Sept.	1925 Oct.	1925 Nov.
1924	Aug....	60.00				
	Sept....	196.66	196.66			
	Oct.....	191.88	148.88	40.00	40.00	
	Nov....	77.25	77.25	27.25	27.25	27.25
	Dec.....	159.95	140.00	43.00		
1925	Jan.....	115.35	115.35	33.00	33.00	33.00
	Feb.....	275.89	275.89	255.87	64.00	*
	Mch....	202.00	202.00	139.00	124.00	84.00
	Apr.....	108 75	108.75	108.75	108.75	108.75
	May....	640.83	685.83	574.83	463.83	427.80
	June....	1,561.40	1,141.63	842.59	618.33	439.09
	July....	21,999.45	1,876.33	766.40	664.91	684.93
	Aug....	3,265.63	23,049.64	836.03	426.92	362.89
	Sept....	341.99	3,271.50	22,259.38	1,428.23	313.12
	Oct.....	22.00	220.73	4,193.98	23,301.86	1,657.16
	Nov....		139.12	406.47	4,137.13	22,777.29
	Dec.....	102.00	102.00	52.00	322.18	4,516.78
1926	Jan.....		87.78	221.60	517.06	913.11
	Feb.....				76.60	341.97
	Mch....					205.66
	Apr.....					52.82
	May....				22.32	90.78
	June....				59.32	145.48
	July....					
	Aug....					
Unpaid*......			15.83	15.83	111.35	190.84
Total.......		29,321.03	31,855.17	30,815.98	32,547.05	33,372.72

TABLE IX (*Continued*)

Collections:	1925 Dec.	1926 Jan.	1926 Feb.	1926 Mch.	1926 Apr.
1924 Aug....					
Sept....					
Oct.....					
Nov....					
Dec.....					
1925 Jan.....					
Feb.....					
Mch....	84.00	50.00	50.00	23.00	
Apr.....	65.75	65.75	65.75	65.75	65.75
May....	269.60	269.60	232.60	232.60	113.55
June....	292.15	292.15	292.15	250.15	213.22
July....	617.93	408.56	408.56	168.85	79.71
Aug....	302.06	115.56	91.31	63.31	63.31
Sept....	279.43	279.43	249.43	198.43	165.58
Oct.....	410.83	179.96	103.40	103.40	67.57
Nov....	670.61	455.53	331 62	331.62	294.60
Dec.....	24,986.43	1,130.38	357.59	341.22	217.00
1926 Jan.....	4,650.34	26,449.51	998.71	684.07	600.42
Feb.....	1,325.31	5,385.68	23,804.32	583.54	386.40
Mch....	307.99	1,372.48	8,842.69	26,735.30	1,115.85
Apr.....	127.34	235.51	934.03	5,980.31	33,076.96
May....	164.87	260.33	629.69	910.59	7,442.82
June....	145.48	172.11	243.58	578.60	936.15
July....			39.00	55.47	228.23
Aug....					
Unpaid*......	416.09	715.18	717.95	717.91	852.41
Total.......	35,116.11	37,837.72	38,392.38	38,033.12	45,919.54

TABLE IX (*Concluded*)

Collections:	1926 May	1926 June	1926 July	1926 Aug.	Total
1924 Aug....					1,010.44
Sept....					7,430.16
Oct.....					11,155.96
Nov....					10,068.48
Dec.....					13,229.95
1925 Jan.....					14,081.09
Feb.....					14,857.95
Mch....					17,258.39
Apr.....					16,200.97
May....					23,655.75
June....	123.78	123.78			29,465.13
July....	79.71	79.71			31,564.27
Aug....	63.31	63.31	63.31		29,047.19
Sept....	165.58	117.90	100.95	61.41	29,267.36
Oct.....	67.61	26.70	18.30	39.56	20,481.06
Nov....	190.62	153.60	107.83	107.83	30,103.87
Dec.....	144.72	53.52	53.52	53.52	32,432.86
1926 Jan.....	449.17	472.37	316.37	257.04	36,617.45
Feb.....	281.06	231.45	202.83	141.97	32,761.13
Mch.....	884.90	772.90	584.10	520.62	41,342.49
Apr.....	1,952.64	1,180 63	922.36	690.82	45,153.42
May....	40,973.89	2,054.48	827.76	602.21	53,979.75
June....	12,349.17	57,374.79	2,221.00	1,228.03	75,462.72
July....	772.35	13,426.21	74,621.07	4,908.52	94,050.85
Aug....	161.00	917.07	14,916.64	80,708.92	96,703.63
Unpaid*......	1,558.58	1,468.89	3,014.68	21,291.83	31,087.37
Total.......	60,218.09	78,517.31	97,970.72	110,612.28	848,469.69

* Includes amounts charged to profit and loss.

TABLE X

AMOUNT DUE AND DISTRIBUTION OF COLLECTIONS IN THE PHILADELPHIA BRANCH TERRITORY OUTSIDE OF THE ANTHRACITE REGION

		1925 Jan.	1925 Feb.	1925 Mch.	1925 Apr.	1925 May
Total Maturities—		342,406.86	327,327.99	316,492.42	307,750.90	300,821.85
Paid in:						
1924	Aug....	3,545.23	2,692.72	2,416.76	1,781.28	1,152.74
	Sept....	4,924.32	4,388.75	3,641.26	3,005.13	2,327.47
	Oct.....	5,517.59	4,857.65	4,309.99	3,842.96	3,233.81
	Nov....	5,448.32	4,844.35	3,996.12	3,751.25	2,358.38
	Dec.....	15,160.03	7,113.91	5,908.17	4,999.29	4,098.89
1925	Jan.....	259,589.34	12,055.42	5,014.17	5,636.19	2,793.53
	Feb.....	37,852.00	236,829.11	10,109.60	4,652.74	3,438.93
	Mch....	4,036.74	46,696.87	242,466.80	16,706.29	6,954.05
	Apr.....	459.00	2,516.35	29,568.70	238,419.50	10,396.97
	May....	145.03	544.47	2,458.39	28,990.54	221,542.96
	June....	89 56	169.20	1,084.28	4,409 80	36,609.66
	July....	180.00	438.33	530.57	2,454.87	4,628.16
	Aug....	94.69	94.69	296.69	368.42	155.15
	Sept....		18.00	18.00	18.00	18.00
	Oct.....					
	Nov....					76.11
	Dec.....					
1926	Jan.....					
	Feb.....					
	Mch....					
	Apr.....					
	May....					
	June....					
	July....					
	Aug....					

TABLE X (*Continued*)

	1925 June	1925 July	1925 Aug.	1925 Sept.	1925 Oct.
Total Maturities—	283,111.03	269,995.98	272,224.58	295,147.18	325,610.36
Paid in:					
1924 Aug....	773.47	345.38	60.00		
Sept....	1,794.10	1,236.41	526.63	195.52	
Oct.....	2,248.76	1,516.74	926.54	519.32	102.30
Nov....	1,524.38	1,045.68	778.26	481.36	189.59
Dec.....	2,655.72	1,795.51	1,216.12	1,074.43	838.74
1925 Jan.....	2,050.20	1,504.20	1,095.20	882.87	633.55
Feb.....	2,806.17	2,254.18	1,624.26	1,191.65	789.00
Mch....	5,316.01	4,009.46	2,561.46	1,641.74	1,292.12
Apr.....	5,784.17	3,646.07	2,882.34	2,216.91	1,635.55
May....	9,553.15	5,287.36	3,694.35	2,926 12	2,416.75
June....	211,963.58	11,569.94	5,042.97	3,423.62	2,680.53
July....	31,810.99	221,545.67	13,323.21	6,182.93	4,706.35
Aug....	574.88	25,699.65	213,993.16	10,569.97	6,558.61
Sept....	83.78	696.79	23,949.73	226,603.68	11,696.78
Oct.....		9.48	2,431.88	32,912.95	258,447.39
Nov....	8.41	47.11	284.28	1,339.46	30,563.87
Dec.....		20.02	450.54	682.98	2,557.09
1926 Jan.....				.91	
Feb.....			258.43	26.03	165.15
Mch....			8.35	81.75	150.14
Apr.....			43.81	97.97	161.37
May....				40.35	98.98
June....			15.83	90.23	58.40
July....			18.77	25.82	34.78
Aug....				8.95	15.56

TABLE X (*Continued*)

		1925 Nov.	1925 Dec.	1926 Jan.	1926 Feb.	1926 Mch.
Total Maturities—		349,554.38	379,339.90	414,751.07	453,782.56	485,899.40
Paid in:						
1924	Aug....					
	Sept....					
	Oct.....					
	Nov....					
	Dec.....	317.87	118.26			
1925	Jan.....	371.22	200.92			
	Feb.....	487.14	220.70	76 00	76.00	
	Mch....	867.04	950.76	569.37	541.37	83.76
	Apr.....	1,468.27	828.84	495.28	354.53	122.23
	May....	1,710.38	1,259.85	867 92	768.18	
	June....	1,796.56	1,313.66	1,080.81	991.55	818.63
	July....	4,045.81	3,185.08	2,565.47	2,078.46	1,812.22
	Aug....	4,638.88	3,637.68	3,061.97	2,902.29	2,675.30
	Sept....	5,551.95	4,817.21	4,110.44	3,749.24	3,510.55
	Oct.....	10,346.66	5,062.11	4,394.22	3,397.16	4,608.40
	Nov....	266,615.85	10,637.74	6,212.02	5,044.03	4,278.00
	Dec.....	48,141.47	300,625.59	15,959.80	8,845.24	6,523.67
1926	Jan.....	2,729.45	44,283.20	324,371.52	13,047.82	8,585.62
	Feb.....	831.92	4,331.09	43,680.83	300,602.71	11,747.67
	Mch....	584.51	1,231.93	4,998 78	103,043.02	384,448.66
	Apr.....	333.89	537.26	1,075.65	5,853.52	49,571.14
	May....	83.82	297.44	1,258.06	2,012.39	2,244.73
	June....	246.59	880.15	819.12	2,059.92	7,768.76
	July....	53.76	70.07	349.79	124.96	607.78
	Aug....	5.56	30.52	87.40	226.17	381.57

TABLE X (*Concluded*)

	1926 Apr.	1926 May	1926 June	1926 July	1926 Aug.
Total Maturities—	566,619.18	636,663.43	745,350.97	819,995.76	876,581.47
Paid in:					
1924 Aug....					
Sept....					
Oct.....					
Nov....					
Dec.....					
1925 Jan.....					
Feb.....					
Mch....					
Apr.....					
May....	40.29				
June....	587.78	219.10	15.41		
July....	1,336.96	788 06	344.81	60.83	
Aug....	2,138.36	1,367.05	588.32	267.68	
Sept....	2,992.77	2,313.30	1,456.81	999.64	650.33
Oct.....	2,438.33	1,768.74	1,260 62	1,028.74	671.79
Nov....	3,776.50	2,932.65	2,453.30	2,023.78	1,728.54
Dec.....	5,778.53	4,731.30	3,651.13	2,936.58	2,341.00
1926 Jan.....	6,775.47	6,087.00	4,906.60	4,145 57	3,450.97
Feb.....	8,206 32	6,596.96	5,290.60	4,039.41	3,610.00
Mch....	19,605.22	10,926 19	8,150.74	6,761.53	6,002.46
Apr.....	434,463.49	18,397 36	11,904.32	10,751.28	9,237.90
May....	70,738.12	432,066 46	21,479.48	14,051.80	10,962.37
June....	7,243.99	140,959.98	533,632.02	35,761.53	26,003.72
July....	616.07	6,080.79	142,370.53	610,218.53	38,222.98
Aug....	567.31	1,244.65	129,469.49	114,552.85	628,986.31

PART FOUR

COMPARISON OF PAYMENTS IN THE ANTHRACITE DISTRICT WITH THOSE OF THE SURROUNDING AREA

1. *Anticipations*
2. *Paid in the Month Due*
3. *Delinquencies*
4. *Payments 1–30 Days Overdue*
5. *Payments 31–60 Days Overdue*
6. *Payments 61–90 Days Overdue*

From Tables VIII, IX, and X of maturities and payments, it is possible to calculate and to compare the delinquencies in the anthracite region with those in the remainder of the Philadelphia branch territory. The comparison, however, will be facilitated by reducing the absolute amounts to percentages. This is done in Table XI, which shows the percentage of total maturities paid each month in the two districts.

1. ANTICIPATIONS

The total percentage of maturities anticipated, as shown by Table XI, does not disclose any great effect of the strike. The data on anticipations are shown graphically on Chart 8. During the first six months of 1925, the higher percentage of anticipations alternates between the two districts. For the last six months of the year, the anticipations in the anthracite district were above those in the remainder of the territory. From January, 1926, until August, 1926, the end of the period under review, the relative positions of the two districts were reversed and the anthracite districts showed the lower percentage of anticipations.

Anticipations to some extent arise from dealers "tak-

ing up" cars and paying the balance of payments before they would otherwise have fallen due. Repossessions may also affect anticipations because the remainder of the payments at the time of repossession are credited to the account as soon as the car is turned over to the dealer and funds are received. In so far, therefore, as the strike increased repossessions, the amount of anticipations should increase. If a comparison is made with the surrounding territory, it is found there was a relative

PERCENTAGE OF MATURITIES ANTICIPATED

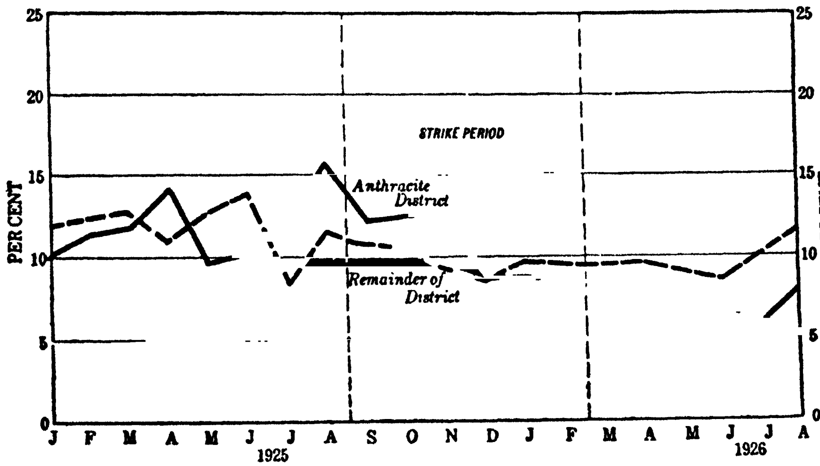

CHART 8

increase of about six per cent. Nevertheless, of the three categories into which Table XI naturally divides itself —anticipations, payments in the month due, and delinquencies—anticipations are, for the present purpose, the least valuable.

Chart 9 presents the differences in the percentages of maturities anticipated in the two districts. This chart is valuable primarily because it eliminates the seasonal movement in the payments. Or, more accurately, it holds the seasonal constant, provided the seasonal movement in the two districts was the same, and allows the variations from other factors alone to be shown.

TABLE

PERCENTAGE OF TOTAL MATURITIES PAID EACH MONTH IN

Due	1925 Jan.		1925 Feb.		1925 Mch.		1925 Apr.	
	Anthracite	Other	Anthracite	Other	Anthracite	Other	Anthracite	Other
Paid in:								
1924 Aug.	.44	1.03	.43	.82	.37	.76	.33	.58
Sept.	1.43	1.43	1.42	1.34	1.22	1.15	1.09	.98
Oct.	2.04	1.60	2.02	1.48	1.19	1.36	1.06	1.25
Nov.	1.13	1.50	.88	1.48	.75	1.26	.67	1.22
Dec.	4.93	4.40	1.92	2.17	1.71	1.87	1.05	1.62
1925 Jan.	75.88	75.80	4.48	3.68	1.61	1.58	1.29	1.18
Feb.	11.32	11.05	71.51	72.35	4.74	3.19	1.93	1.51
Mch.	1.33	01.17	15.36	14.27	74.80	76.61	6.51	5.43
Apr.	.50	.13	1.49	.77	11.82	9.34	69.96	77.47
May		.04	.49	.17	1.15	.78	14.11	9.42
June		.02		.05	.64	.34	1.19	1.43
July		.05		.13		.17	.81	.80
Aug.		.03		.03		.09		.12
Sept.				.01		.01		.01
Oct.								
Nov.								
Dec.								
1926 Jan.								
Feb.								
Mch.								
Apr.								
May								
June								
July								
Aug.								
Unpaid								

XI

THE ANTHRACITE DISTRICT AND SURROUNDING TERRITORY

1925 May		1925 June		1925 July		1925 Aug.		1925 Sept.		1925 Oct.	
Anthracite	Other	Anthracite	Other	Anthracite	Other	Anthracite	Other	Anthracite	Other	Anthracite	Other
.27	.38	.24	.27	.20	.13		.02				
.89	.77	.77	.63	.67	.46	.62	.19		.01		
.87	1.08	.75	.79	.65	.56	.47	.34	.13	.18	.12	.03
.55	.78	.48	.53	.26	.39	.24	.29	.09	.16	.08	.06
.86	1.36	.75	.94	.55	.67	.44	.45	.14	.36		.26
1.06	.93	.90	.72	.39	.56	.36	.40	.11	.30	10.	.19
1.58	1.14	1.08	.99	.94	.84	.87	.60	.83	.40	.20	.24
1.30	2.31	.93	1.88	.69	1.49	.63	.94	.45	.56	.38	.40
1.87	3.46	.43	2.04	.37	1.35	.34	1.06	.35	.75	.33	.50
72.75	73.65	3.61	3.37	2.18	1.99	2.15	1.36	1.87	.99	1.43	.74
15.75	12.17	76.44	74.87	5.33	4.29	3.58	1.85	2.73	1.16	1.90	.82
1.94	1.54	12.38	11.24	75.03	82.06	5.89	4.89	2.49	2.09	2.04	1.45
.31	.05	.83	.20	11.14	9.52	72.36	78.61	2.71	3.58	1.31	2.01
	.01	.14	.03	1.17	.26	10.27	8.80	72.23	76.78	4.39	3.59
		.27		.08		.69	.89	13.61	11.15	71.60	79.37
	.03			.35	.02	.44	.10	1.32	.45	12.71	9.39
					.01	.32	.17	.17	.23	.99	.79
								.72		1.59	
						.28	.10		.01	.24	.05
									.03		.05
							.02		.03		.05
									.01	.07	.03
							.01		.03	.18	.02
							.01		.01		.01
						.05		.05		.34	

TABLE XI

Due	1925 Nov.		1925 Dec.		1926 Jan.		1926 Feb.	
	Anthracite	Other	Anthracite	Other	Anthracite	Other	Anthracite	Other
Paid in:								
1924 Aug.								
Sept.								
Oct.								
Nov.	.08							
Dec.		.09		.03				
1925 Jan.	.10	.11		.05				
Feb.		.14		.06		.02		.02
Mch.	.25	.24	.24	.25	.13	.14	.13	.12
Apr.	.33	.42	.19	.22	.17	.12	.17	.08
May	1.28	.49	.77	.33	.71	.21	.61	.17
June	1.32	.50	.83	.35	.77	.26	.77	.22
July	2.05	1.16	1.76	.84	1.08	.62	1.06	.45
Aug.	1.09	1.33	.86	.96	.31	.69	.24	.64
Sept.	.94	1.59	.80	1.27	.74	.99	.65	.83
Oct.	4.97	2.89	1.17	1.33	.48	1.06	.27	.75
Nov.	68.24	74.15	1.91	2.80	1.20	1.50	.86	1.11
Dec.	13.53	13.77	71.16	79.25	2.99	3.85	.93	1.95
1926 Jan.	2.74	.78	13.24	11.67	69.90	78.21	2.60	2.88
Feb.	1.02	.24	3.77	1.14	14.23	10.53	62.01	66.24
Mch.	.62	.17	.88	.32	3.63	1.21	23.03	22.71
Apr.	.16	.10	.36	.14	.62	.26	2.43	1.29
May	.27	.02	.47	.08	.69	.30	1.64	.44
June	.44	.07	.41	.23	.46	.20	.63	.45
July		.02		.02		.08	.10	.03
Aug.	.57			.01		.02		.05
Unpaid			1.18		1.89		1.89	

(Concluded)

1926 Mch.		1926 Apr.		1926 May		1926 June		1926 July		1926 Aug.	
Anthracite	Other	Anthracite	Other	Anthracite	Other	Anthracite	Other	Anthracite	Other	Anthracite	Other
.06	.02										
.17	.03	.14									
.61		.25	.01								
.66	.17	.46	.10	.21	.03	.16					
.44	.39	.17	.24	.13	.12	.10	.05		.01		
.17	.55	.14	.38	.11	.21	.08	.08	.06			
.52	.72	.36	.53	.27	.36	.15	.20	.10	.12	.06	.01
.27	.95	.15	.43	.11	.28	.03	.20	.02	.13	.04	.08
.87	.88	.64	.67	.32	.46	.20	.33	.11	.25	.10	.20
.90	1.34	.47	1.02	.24	.74	.07	.50	.05	.36	.05	.27
1.80	1.77	1.31	1.20	.75	.96	.60	.66	.32	.51	.23	.39
1.53	2.42	.84	1.45	.47	1.04	.29	.71	.21	.49	.13	.41
70.30	79.12	2.43	3.46	1.47	1.72	.98	1.09	.60	.82	.47	.68
15.73	10.20	72.03	76.68	3.24	2.89	1.50	1.60	.94	1.31	.62	1.05
2.39	.46	16.21	12.48	68.03	67.87	2.62	2.88	.84	1.71	.54	1.25
1.54	1.60	2.04	1.28	20.51	22.14	73.08	71.59	2.27	4.36	1.11	2.97
.15	.13	.50	.11	1.28	.96	17.10	19.10	76.17	74.42	4.44	4.36
	.08		.10	.27	.20	1.17	.79	15.23	13.97	72.96	71.75
1.89		1.89		2.59		1.87		3.08		19.25	

The figures upon which the charts are based are given in Table XII.

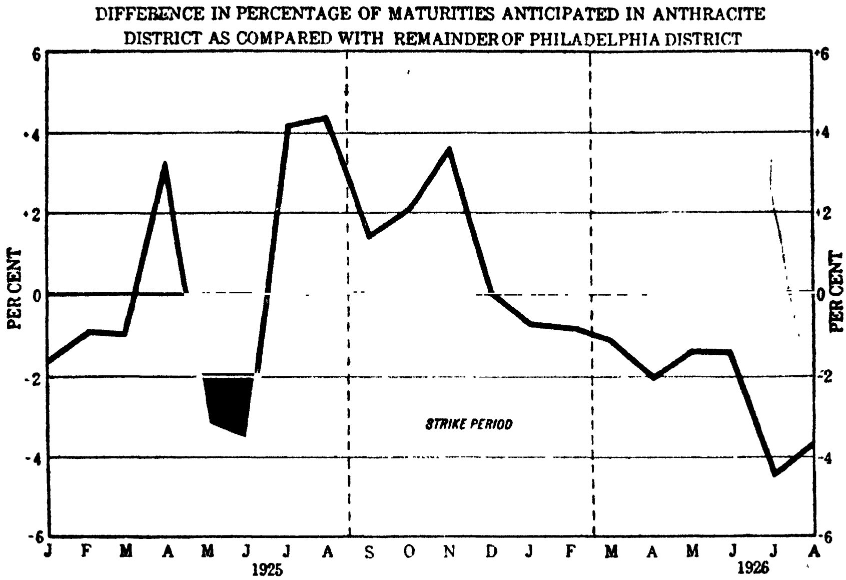

CHART 9

2. Paid in the Month Due

The percentage of total maturities paid in the month due reveals a continuous decline during the period of the strike. There appears to be a more or less general tendency for the anthracite region to pay less promptly than the remainder of the Philadelphia branch territory; but during the strike the difference between the two percentages is larger, averaging over five per cent for the period. Chart 10 shows the actual percentages paid in the month due.

The differences in the percentages paid in the month due in the anthracite district as compared with the surrounding area are shown by Chart 11. It is worthy of note that the percentage of payments declined two months before the strike was called and remained low in the month following the settlement of the strike.

It is possible that the low payments preceding the strike were in anticipation of the curtailment of the income, but this can not be determined from the figures.

TABLE XII

PERCENTAGE OF MATURITIES ANTICIPATED

Month of Maturity	Anthracite District	Remainder of Philadelphia Region	Difference
1925 Jan.	9.97	11.71	−1.74
Feb.	11.15	12.22	−1.07
Mch.	11.59	12.66	−1.07
Apr.	13.93	10.75	+3.18
May	9.25	12.55	−3.30
June	9.94	13 66	−3.72
July	12.23	8.13	+4.10
Aug.	15.59	11 29	+4.30
Sept.	11.90	10.54	+1.36
Oct.	12.28	10 29	+1.99
Nov.	12.41	8.96	+3.45
Dec.	8 53	8.49	+0.04
1926 Jan.	8 58	9 46	−0.88
Feb.	8 29	9.22	−0.93
Mch.	8.00	9 24	−1.24
Apr.	7.36	9.49	−2.13
May	7.32	8.81	−1.49
June	6 78	8.30	−1.52
July	5.52	10.07	−4.55
Aug.	7.79	11.67	−3.88

Inasmuch as Chart 11 presents only the differences between the percentages, the seasonal influence is removed to the extent that it is the same in both districts. The short periods for which the data in the anthracite district are available make it impossible to determine with accuracy any particular seasonal movement which it may have. Observation of the chart, nevertheless, would indicate that no appreciable seasonal variation is present. The conclusion may, therefore, be drawn that, in general, the strike reduced the percentage paid in the month due by almost five per cent.

PERCENTAGE OF MATURITIES PAID IN MONTH DUE

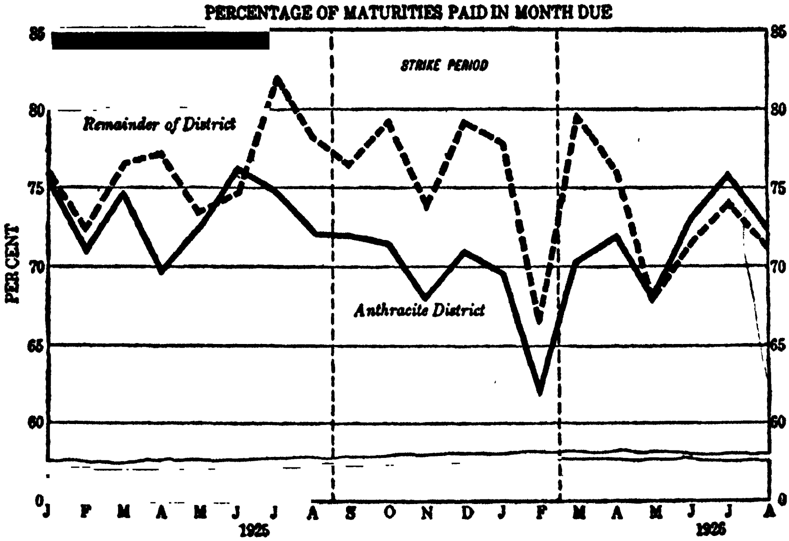

CHART 10

DIFFERENCE IN
PERCENTAGE OF MATURITIES PAID IN MONTH DUE IN ANTHRACITE
DISTRICT AS COMPARED WITH REMAINDER OF PHILADELPHIA DISTRICT

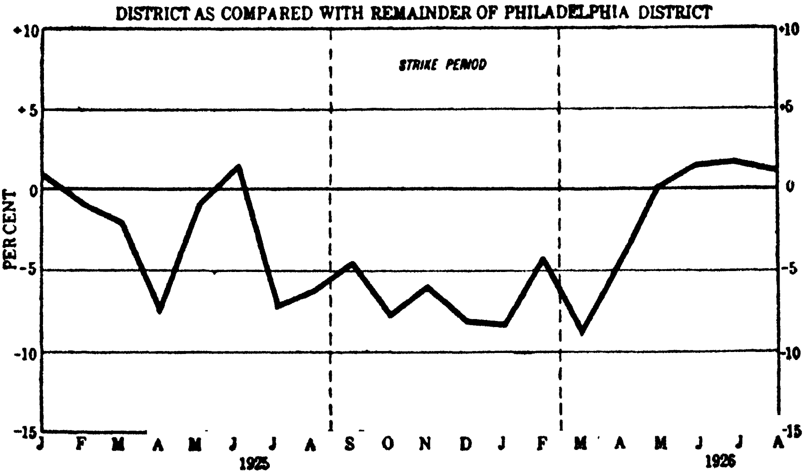

CHART 11

The figures upon which the charts are based are given in Table XIII.

TABLE XIII

PERCENTAGE OF MATURITIES PAID IN MONTH DUE

Month of Maturity	Anthracite District	Remainder of Philadelphia Region	Difference
1925 Jan.	75.88	75.80	+0.08
Feb.	71.51	72.35	−0.84
Mch.	74.80	76.61	−1.81
Apr.	69.96	77.47	−7.51
May	72.75	73.65	−0.90
June	76.44	74.87	+1.51
July	75.03	82.06	−7.03
Aug.	72.36	78.61	−6.25
Sept.	72.23	76.78	−4.55
Oct.	71.60	79.37	−7.77
Nov.	68 24	74.15	−5.91
Dec.	71.16	79.25	−8.09
1926 Jan.	69.90	78.21	−8.31
Feb.	62.01	66.24	−4.23
Mch.	70.30	79.12	−8.82
Apr.	72.03	76 68	−4.65
May	68.03	67.87	+0.16
June	73.08	71.59	+1.49
July	76.17	74.42	+1.75
Aug.	72.96	71.75	+1.21

3. Delinquencies

It has been noted in a preceding section that no decline in the percentage of maturities anticipated is to be attributed to the strike. Accordingly, the decline in the percentage paid in the month due, which has just been pointed out, must of necessity be shown in the percentage of total maturities delinquent, since these three items—anticipations, payments in the months due, and delinquencies—make up the total of all payments.

In the study of the percentage of delinquencies as

shown by Chart 12, two points stand out plainly. In the first place, it is evident that purchasers in the anthracite area are normally less prompt in their payments than are those in the surrounding area. In the second place, it is clear that the strike period marked a decided increase in the percentage of the delinquencies in the anthracite area. Only the second point is pertinent to the present study.

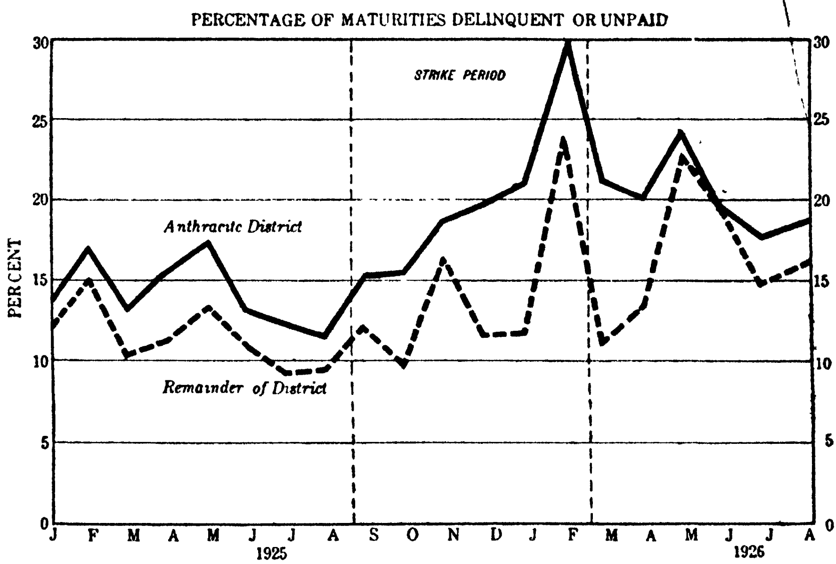

CHART 12

To determine more definitely the exact influence of the strike on delinquencies, it is helpful to use Chart 13. This chart of the differences between the delinquencies of the two districts holds the seasonal variations constant and takes into consideration the increase which occurred in the remainder of the district during the period. By reference to this chart, it will be noted that in 1925, previous to the strike, the percentage of the total maturities delinquent varied from approximately two per cent to about four per cent above that of the surrounding area. With the outbreak of the strike, the

difference between the two began to increase and by March, when the miners received their first pay, it had reached ten per cent. From this peak, it fell continuously until, in June, it was no higher than in the remainder of the Philadelphia district. Later, it reached a level two to three per cent above that of the surrounding territory.

It is possible, therefore, to state with considerable certainty that the strike augmented, on the average, by

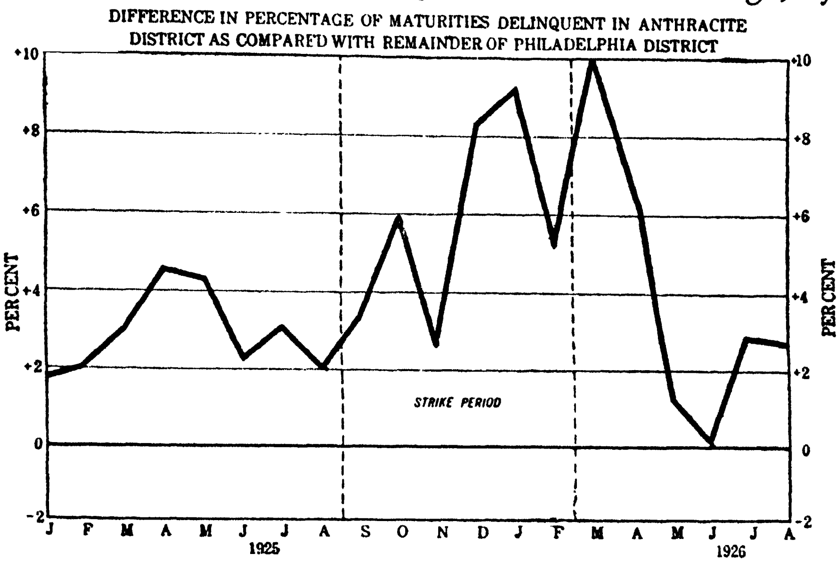

CHART 13

three or four per cent the percentage of total maturities delinquent, and that, as the strike continued, the percentage of delinquencies increased.

The figures upon which the charts are based are given in Table XIV.

4. Payments 1–30 Days Overdue

It is not sufficient merely to determine that the strike increased the percentage of delinquencies. Rather, the length of the delinquencies must be ascertained in so far as possible. If the increased percentage arises in the

TABLE XIV

PERCENTAGE OF MATURITIES DELINQUENT *

Month of Maturity	Anthracite District	Remainder of Philadelphia Region	Difference
1925 Jan.	14.15	12.49	+1.66
Feb.	17.34	15.43	+1.91
Mch.	13.61	10.73	+2.88
Apr.	16.11	11.78	+4.33
May	18.00	13.80	+4.20
June	13.62	11.47	+2.15
July	12.74	9.81	+2.93
Aug.	12.05	10.10	+1.95
Sept.	15.87	12.68	+3.19
Oct.	16.12	10.34	+5.78
Nov.	19.35	16.89	+2.46
Dec.	20.31	12.26	+8.05
1926 Jan.	21.52	12.33	+9.19
Feb.	29 72	24 54	+5.18
Mch.	21 70	11.64	+10.06
Apr.	20.61	13.83	+6.78
May	24.65	23.32	+1.33
June	20.14	20.11	+0.03
July	18.31	15.51	+2.80
Aug.	19.25	16.58	+2.67

* Includes the amount unpaid as of September 1, 1926.

short delinquencies, it is of limited importance. While the slowing-up of payments might cause inconvenience to the firm operating on a very narrow margin of capital, it would cause no embarrassment to the company with ample surpluses. Long-period delinquencies, on the other hand, involve the possibility of danger for exactly the same reason that "frozen loans" in a commercial bank are dangerous. Both, to the extent that they are present, lower the degree of the liquidity of the organization. It is true, of course, that the finance company does not have demand obligations in the sense that a commercial bank does; but if it is borrowing, as all do,

PERCENT OF MATURITIES PAID 1-30 DAYS AFTER DUE
BY CALENDAR MONTHS

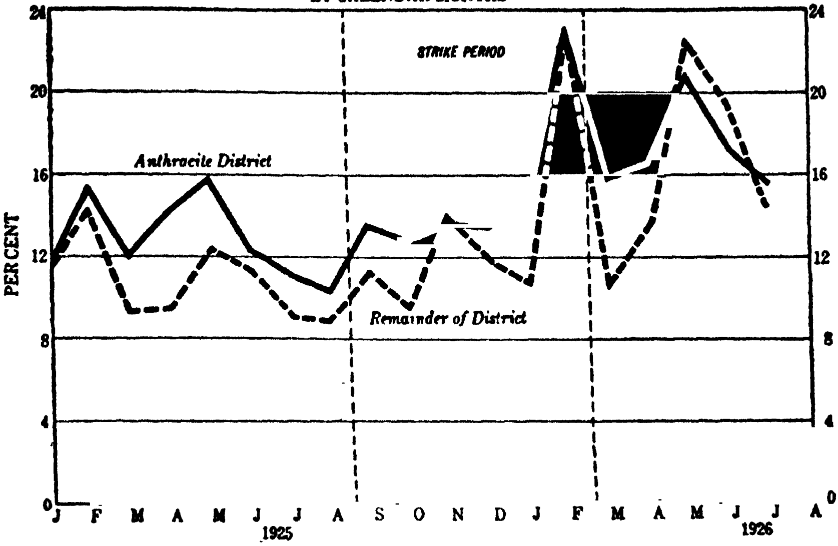

CHART 14

DIFFERENCE IN PERCENTAGE OF MATURITIES PAID 1-30 DAYS AFTER DUE IN
ANTHRACITE DISTRICT AS COMPARED WITH REMAINDER OF
PHILADELPHIA DISTRICT

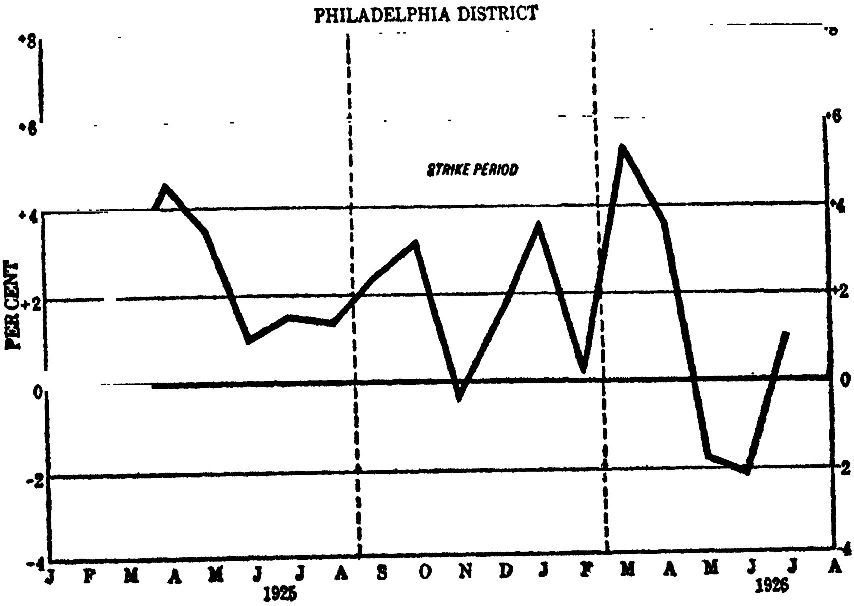

CHART 15

the maturing loans necessitate either a high element of liquidity or a reduction in the rate of turn-over of capital and hence a diminution of profits.

Chart 14 shows the percentage of maturities paid from one to thirty days after due in the anthracite district, as compared with the surrounding area. Chart 15 shows the variation of the anthracite district from the remainder of the territory. From the former chart, it may be noted that there was an upward tendency in the anthracite district during the strike, but that the remainder of the territory likewise experienced an increase. By reference to Chart 15, it will be seen that the difference between the two districts was not materially increased during the strike. The conclusion may be

TABLE XV

PERCENTAGE OF MATURITIES PAID 1–30 DAYS AFTER DUE

Month of Maturity	Anthracite District	Remainder of Philadelphia Region	Difference
1925 Jan.	11 32	11.05	+0.27
Feb.	15.36	14.27	+1.09
Mch.	11.82	9.34	+2 48
Apr.	14.11	9 42	+4.69
May	15.75	12 17	+3.58
June	12 38	11.24	+1 14
July	11 14	9.52	+1.62
Aug.	10.27	8.80	+1.47
Sept.	13.61	11.15	+2.46
Oct.	12.71	9.39	+3.32
Nov.	13.53	13.77	−0.24
Dec.	13.24	11.67	+1.57
1926 Jan.	14.23	10.53	+3.70
Feb.	23.03	22.71	+0.32
Mch.	15.73	10.20	+5 53
Apr.	16.21	12.48	+3.73
May	20.51	22.14	−1.63
June	17 10	19.10	−2.00
July	15.23	13.97	+1.26

drawn that the strike did not noticeably affect the percentage of maturities running past due less than one month.

The figures upon which Charts 14 and 15 are based are given in Table XV.

5. Payments 31–60 Days Overdue

An examination of the payments overdue for more than a month reveals an increase which is evidently due to the strike. The tendency which was noted earlier for payment to be less prompt in the anthracite district than in the remainder of the Philadelphia branch territory is still evident; but there is also a relative increase in the amount paid from 31 to 60 days after due. From Chart 16, it may be seen that in 1925, before the strike, the proportion of this type of payment in the anthracite district averaged not more than one and one-half per cent of the total maturities, while in the surrounding area it was more nearly one per cent. The percentage in the latter district showed a very slight increase during the remainder of the year, while the percentage in the anthracite region almost doubled. The peak in the coal district, however, came in December, and thereafter followed a rapid decline to the pre-strike level.

A truer picture of the situation is shown by Chart 17. This affords clear evidence of the effect of the strike. The drop of almost one per cent which came in the short month of February, 1926, is, to some extent, explained by the fact that the calculations have, of necessity, been made by the calendar months, rather than by a tabulation of the exact number of days intervening between the date due and the date paid.

Briefly, it may be said that the strike increased on the average by about one per cent the maturities paid from 31 to 60 days after due.

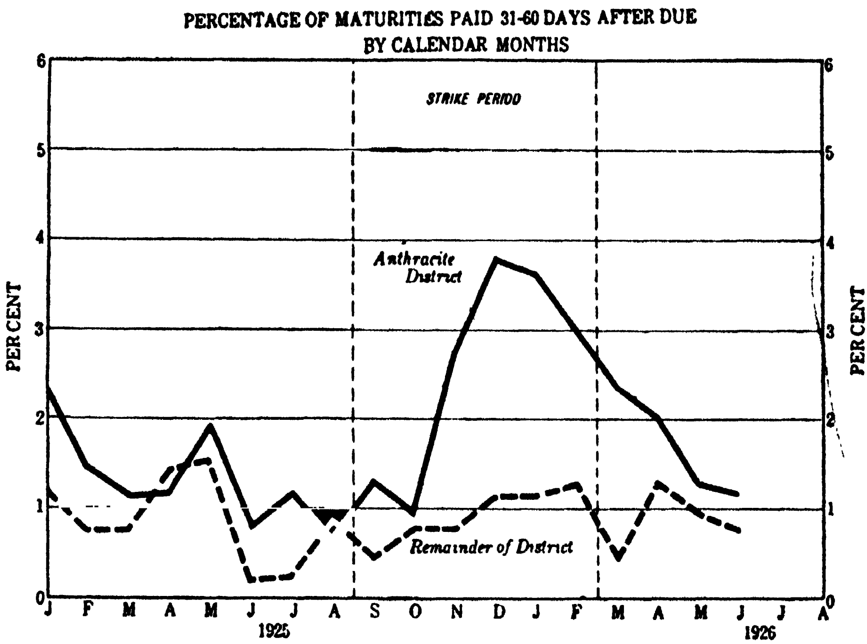

CHART 16

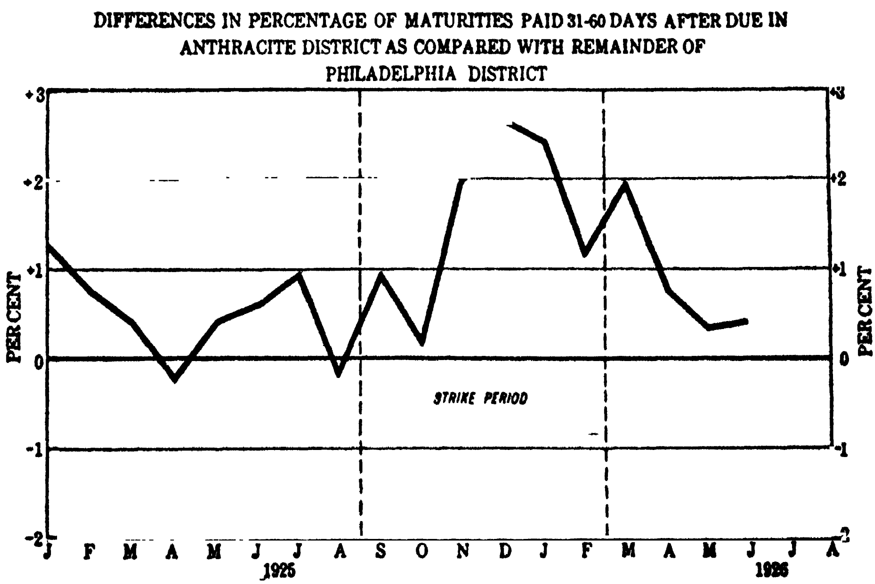

CHART 17

Charts 16 and 17 are based upon the figures in Table XVI.

TABLE XVI

PERCENTAGE OF MATURITIES PAID 31–60 DAYS AFTER DUE

Month of Maturity	Anthracite District	Remainder of Philadelphia Region	Difference
1925 Jan.	2.33	1 17	+1.16
Feb.	1.49	0.77	+0.72
Mch.	1.15	0.78	+0.37
Apr.	1.19	1.43	−0.24
May	1.94	1.54	+0.40
June	0.83	0.20	+0.63
July	1.17	0.26	+0.91
Aug.	0.69	0.89	−0.20
Sept.	1.32	0.45	+0.87
Oct.	0.99	0.79	+0.20
Nov.	2.74	0.78	+1.96
Dec.	3.77	1.14	+2.63
1926 Jan.	3.63	1.21	+2.42
Feb.	2.43	1.29	+1.14
Mch.	2.39	0.46	+1.93
Apr.	2.04	1.28	+0.76
May	1.28	0.96	+0.32
June	1.17	0.79	+0.38

6. Payments 61–90 Days Overdue

The tendency for the payments farther and farther past due to increase in the strike period is still more plainly shown by a study of payments made 61 to 90 days after due. It will be noted from Chart 18 that in 1925, before the strike period, the percentage paid within this length of time after due was in both the anthracite district and the remainder of the Philadelphia branch district, almost without exception, less than one-half of one per cent. Beginning in July, 1925, the percentage in the surrounding area began to increase and continued to advance until March, 1926. The

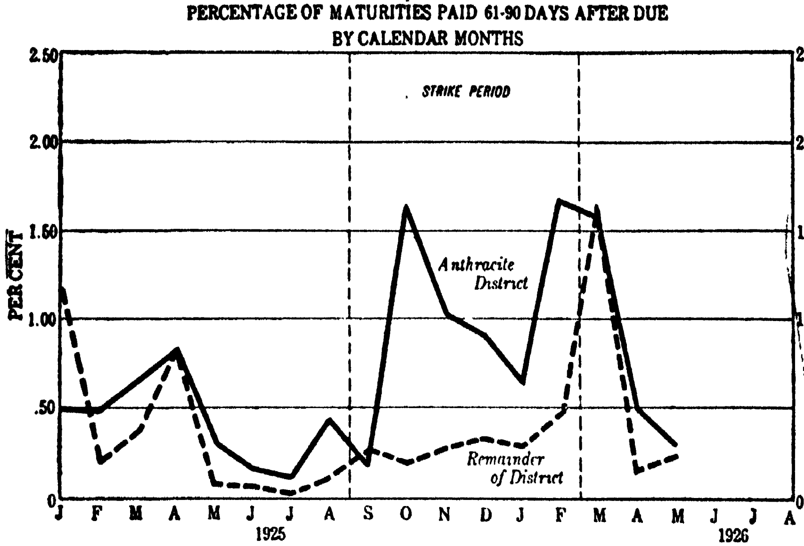

CHART 18

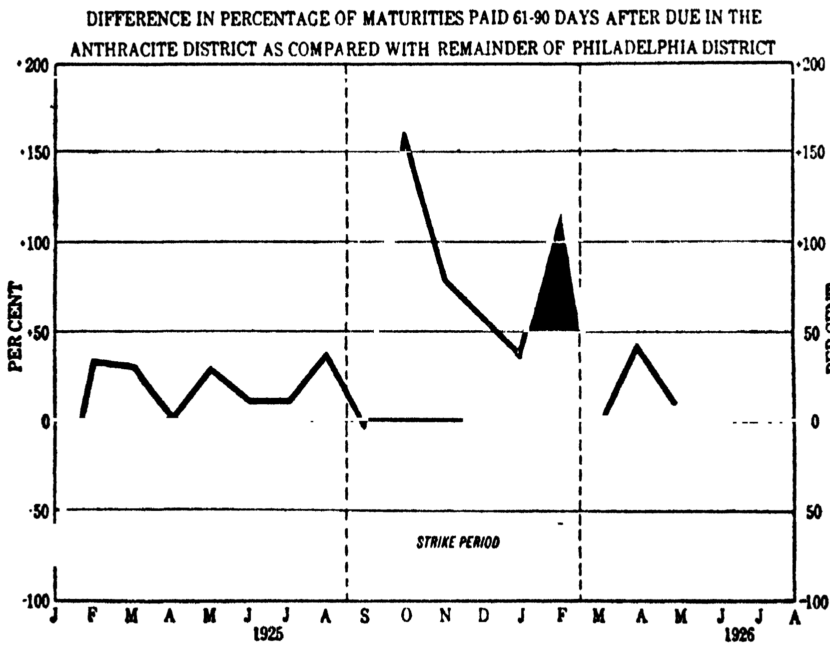

CHART 19

increase, however, was slight as compared with that in the mining territory.

Again, it is helpful to refer to Chart 19, showing the differences in the two districts. An examination of this chart reveals an increase, on the average, of from one-fourth of one per cent to approximately three-quarters of one per cent.

The figures upon which Charts 18 and 19 are based are given in Table XVII.

TABLE XVII

PERCENTAGE OF MATURITIES PAID 61–90 DAYS AFTER DUE

Month of Maturity	Anthracite District	Remainder of Philadelphia Region	Difference
1925 Jan.	0 50	1 17	−0 67
Feb.	0.49	0.17	+0.32
Mch.	0 64	0.34	+0.30
Apr.	0.81	0 80	+0.01
May	0 31	0.05	+0.26
June	0 14	0 03	+0.11
July	0.08	0 00	+0.08
Aug.	0.44	0.10	+0.34
Sept.	0.17	0.23	−0.05
Oct.	1.59	0.00	+1.59
Nov.	1.02	0 24	+0 78
Dec.	0.88	0 32	+0.56
1926 Jan.	0.62	0 26	+0.36
Feb.	1 64	0 44	+1.20
Mch.	1.54	1.60	−0.06
Apr.	0.50	0.11	+0.39
May	0.27	0.20	+0.07

PART FIVE

EXAMINATION OF DELINQUENCIES IN THE ANTHRACITE REGION

1. *Percentage of Maturities Delinquent*
2. *Payments 11–20 Days after Due*
3. *Payments 21–30 Days after Due*
4. *Payments 31–60 Days after Due*
5. *Payments 61–90 Days after Due*
6. *Payments over 90 Days after Due*
7. *Total Percentage of Maturities Delinquent over 10 Days*

The analysis has thus far revealed the tendency of the strike to increase the percentage of maturities paid after due. Inasmuch, however, as the monthly reports of the General Motors Acceptance Corporation, which have been the basis of the preceding comparisons, show delinquencies only in rather broad groups, it is desirable to make a more detailed examination than was possible when the anthracite data were to be compared with the data for the remainder of the Philadelphia branch territory. The data given in this section of the study are based upon the actual number of days elapsing between the date the maturities were due and the date they were paid.

To differentiate still more clearly between this section and the preceding one, it may be mentioned that in the former section the only reference to delinquencies was to the totals, according to calendar months. If, for example, a note fell due on the first of the month and was paid on the thirty-first, it would not appear as delinquent in the data which have thus far been analyzed. On the other hand, if a note due on the thirty-first was paid on the first of the following month it would appear in the

delinquencies. For all ordinary purposes, such a rough method of calculating delinquencies is sufficient; but for the present task it is necessary to have greater accuracy.

It will be noted that only the delinquencies of over ten days are considered. Payments made from one to ten days after due are little influenced by economic conditions. This type of delinquency arises primarily because of the failure of the purchasers to make the remittances until the day they are due. Consequently, by the time the payment is received by the collecting office and the account is credited, one or two, or maybe, seven or eight days will have elapsed. A second cause for these short delinquencies, or "mechanical lags," is that the purchaser may make the payment to the dealer, who in turn forwards it to the finance company. While this latter practice is discouraged by the General Motors Acceptance Corporation, there are a vast number of dealer payments which are merely such remittances of purchasers. Even payments received in the late afternoon at the collecting office are credited to the account of the purchaser as of the following day and so may come in the category of payments made after due.

The figures in Table XVIII, on pages 590–591, giving the amount of delinquencies in the anthracite region, are shown on logarithmic charts (Nos. 20 and 21). In examining these charts, it is essential to remember that they are valuable primarily because they disclose the proportional changes in a given set of data. It is not advisable to compare curves in different sections of the chart unless very close attention is given to the actual amounts represented. This will be clear if it is noted that the bottom third of the charts represents sums from $100 to $1,000, while the upper third represents amounts from $10,000 to $100,000. The charts are, nevertheless, helpful for showing at a glance the trend of maturities and delinquencies over the period covered.

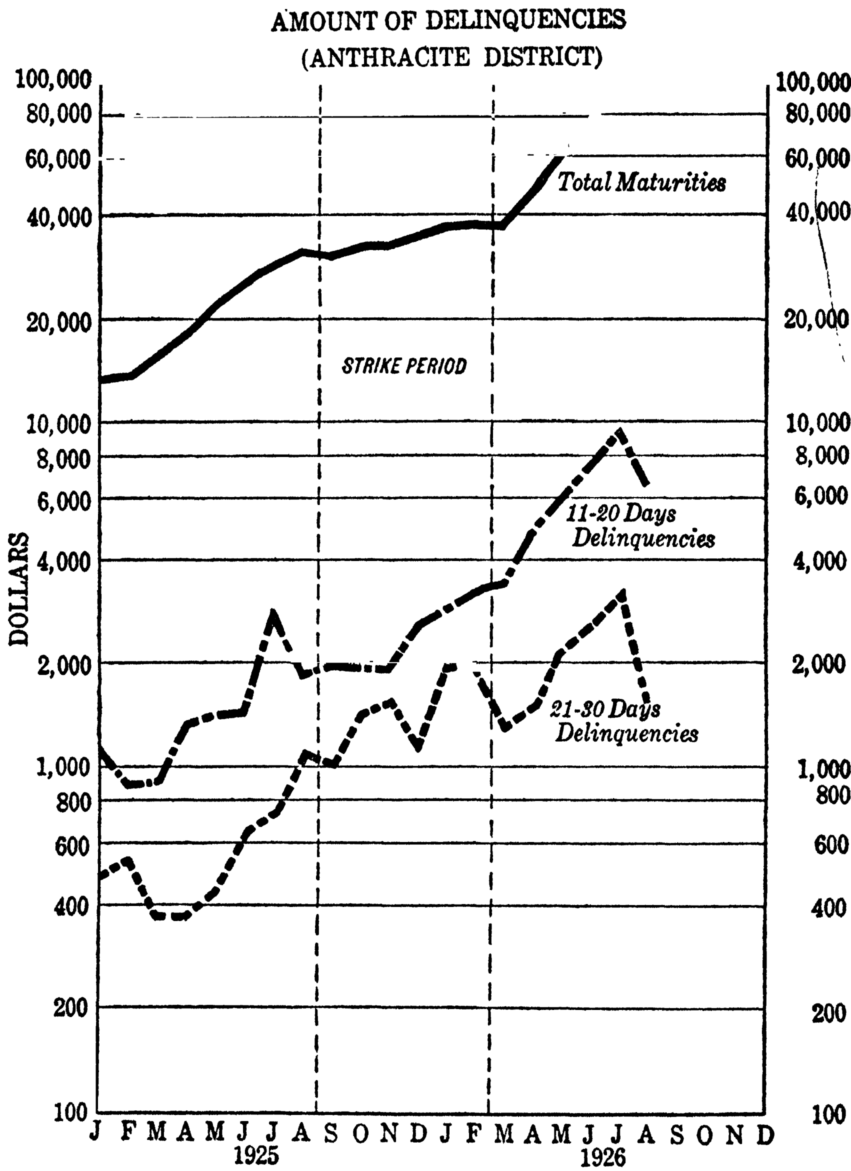
AMOUNT OF DELINQUENCIES
(ANTHRACITE DISTRICT)
DOLLARS
100,000
80,000
60,000
40,000
20,000
10,000
8,000
6,000
4,000
2,000
1,000
800
600
400
200
100
Total Maturities
STRIKE PERIOD
11-20 Days Delinquencies
21-30 Days Delinquencies
J F M A M J J A S O N D J F M A M J J A S O N D
1925
1926

CHART 20

AMOUNT OF DELINQUENCIES
(ANTHRACITE DISTRICT)

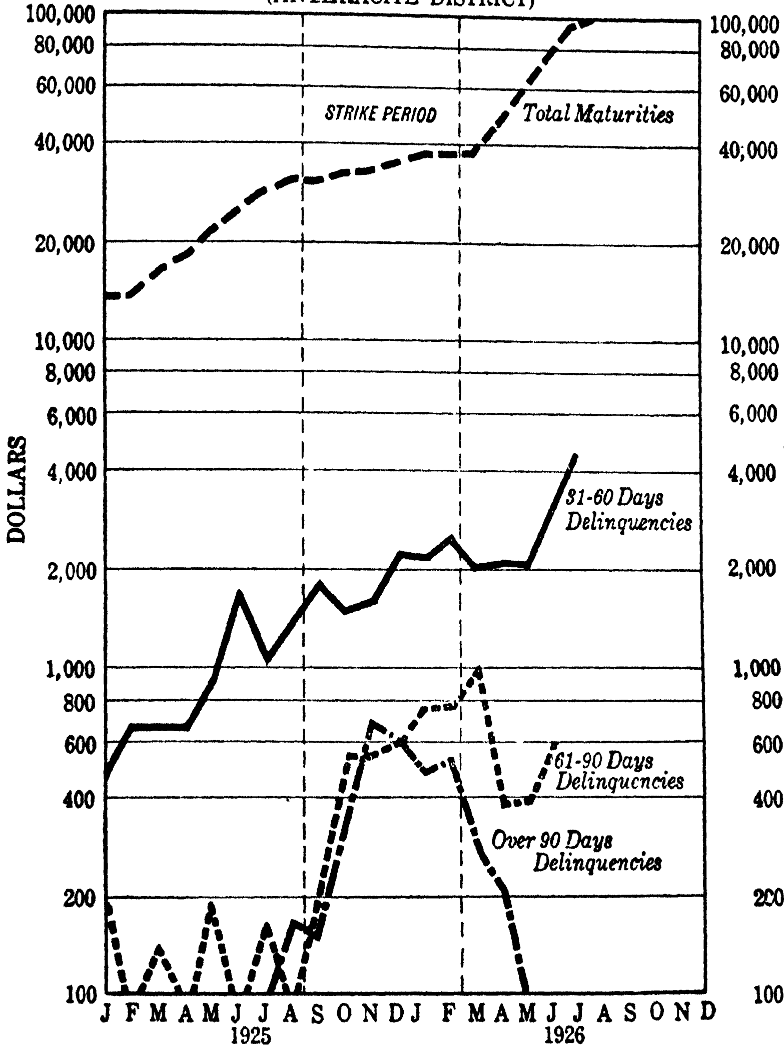

CHART 21

TABLE XVIII

DELINQUENCIES CALCULATED FROM DATE DUE TO DATE PAID

	1925				
	Jan.	Feb.	Mch.	Apr.	May
Total Maturities:	13,695.43	13,814.80	16,170.61	18,043.37	22,027.31
Days— 11–20	1,115.46	891.98	912.43	1,329.62	1,427.12
" — 21–30	473.76	545.62	377.18	370.76	469.89
" — 31–60	474.21	659.64	664.24	645.66	884.05
" — 61–90	191.61	27.00	139 63	65 45	190.64
" —Over 90				78 91	
Total.......	2,255.04	2,123.24	2,093.48	2,490.40	2,971.70

TABLE XVIII (*Continued*)

	1925				
	June	July	Aug.	Sept.	Oct.
Total Maturities:	25,493.07	29,321.03	31,855.17	30,815.98	32,547.05
Days— 11–20	1,446 88	2,853.39	1,860.55	1,971.54	1,944.20
" — 21–30	629.76	730 57	1,076.76	989.66	1,397.62
" — 31–60	1,703.64	1,032.42	1,343.22	1,791.77	1,487.74
" — 61–90	64 63	169.04	76.00	197.47	526.61
" —Over 90	35.00	22.00	164.12	150.13	337.23
Total.......	3,879.91	4,807.42	4,520.65	5,100.57	5,693.40

TABLE XVIII (*Continued*)

	1925		1926		
	Nov.	Dec.	Jan.	Feb.	Mch.
Total Maturities:	33,372.72	35,116.11	37,837.72	38,392.38	38,033.12
Days— 11–20	1,931.55	2,503.40	2,897.47	3,220.87	3,482.04
" — 21–30	1,424.45	1,153.79	1,928.69	1,988.83	1,298.02
" — 31–60	1,584.22	2,187.27	2,126.49	2,444.65	1,968.15
" — 61–90	531.99	579.02	749.68	757.42	999.35
" —Over 90	664.31	602.10	485.26	532.07	279.20
Total.......	6,136.52	7,025.58	8,187.59	8,943.84	8,026.76

TABLE XVIII (*Concluded*)

	1926				
	Apr.	May	June	July	Aug.
Total Maturities:	45,919.54	60,218.09	78,517.31	97,970.72	110,612.28
Days— 11–20	4,852.11	6,042.61	7,555.72	9,342.05	6,477.91
" — 21–30	1,491.10	2,141.26	2,520.74	3,135.54	1,484.77
" — 31–60	2,053.46	2,019.89	3,099.48	4,770.69	
" — 61–90	379.96	395.00	595.85		
" —Over 90	211.76	93.75			
Total.......	8,988.39	10,692.51	13,771.79	17,248.28	7,962.68

1. Percentage of Maturities Delinquent

The great increase in maturities in the anthracite region during the period under review makes it difficult to draw conclusions from the actual dollar amounts. The increase is the result of two factors: first, a large increase in the volume of paper bought from dealers in the district; and second, the fact that the maturities involved in this study include only those of paper bought after July, 1924. The result of this last condition is that the volume of maturities shown as of January, 1925, is only about one-half the actual total maturities. Not until August, 1925, would the amount shown by the sample which is being utilized coincide with the actual total maturities of the district.

To eliminate the inconvenience arising from the great increase in maturities, it is necessary merely to reduce all the figures to percentages. The result is shown in Table XIX, on the following page. It should be noted that the percentage given under each of the various groups is the percentage of total maturities which were both delinquent and paid in that period. In other words, all paper that was delinquent from 21–30 days was of necessity delinquent 11–20 days. The difference between the various groups is that the paper delinquent, say, 61–90 days was not paid until after the period covered by the preceding groups.

2. Payments 11–20 Days After Due

In payments made over ten days after due, it is no longer possible to find an explanation in the delay of routine mechanism. Here, it is possible to credit any increase entirely to outside factors. The trend of payments made from 11–20 days after due is shown by Chart 22.

This chart discloses several interesting facts. In 1925,

TABLE XIX

PERCENTAGE OF TOTAL MATURITIES IN ANTHRACITE REGION DELINQUENT AND PAID, DIVIDED BY GROUPS

Month of Maturity		11–20 Days	21–30 Days	31–60 Days	61–90 Days	Over 90 Days	Total
1925	Jan.	8.14	3 46	3 46	1 40	—	16 46
	Feb.	6.46	3 95	4 77	0.20	—	15.38
	Mch	5 64	2 33	4.11	0 86	—	12.94
	Apr.	7.37	2 05	3 58	0.36	0.44	13.80
	May	6.48	2 13	4.01	0.87	—	13.49
	June	5.68	2.47	6 68	0.25	0.14	15.22
	July	9 73	2 49	3 52	0.58	0.08	16.40
	Aug.	5.84	3 38	4.22	0 24	0.52	14.20
	Sept.	6 40	3 21	5 81	0 64	0.49	16 55
	Oct.	5 97	4 29	4 57	1 62	1.04	17.49
	Nov.	5 79	4 27	4.75	1.59	1 99	18.39
	Dec.	7 13	3 29	6.29	1.65	1.71	20.07
1926	Jan.	7.66	5.10	5 62	0.20	0.13	18.71
	Feb.	8 39	5 18	6 37	0 20	0.14	20.28
	Mch	9 16	3.41	5 17	2.63	0.73	21.10
	Apr.	10 57	3 25	4.47	0.83	0 46	19.58
	May	10.03	3 56	3.35	0 66	0.02	17.62
	June	9 62	3.21	3 95	0.76	—	17.54
	July	9 34	3 20	4.87	—	—	17.41
	Aug.	5.86	0 12	—	—	—	5.98

previous to the strike, no trend is readily visible. On the contrary, the percentage was decidedly irregular and in one month, July, rose to almost ten per cent of total maturities. In the following month it fell to below six per cent. It did not vary widely from this level for three months. December, however, marked the beginning of a rise which continued steadily until April, 1926, when a high point of about ten and one-half per cent was attained. Thereafter, the fall was continuous, but after three months the percentage still stood at nine and one-half per cent. August, 1926, witnessed a drop to approximately six per cent, a level

almost identical with that of the same month of the preceding year. There appears to be little doubt, therefore, that the strike caused an appreciable increase in payments from 11–20 days after due, but within this period the erratic nature of the percentage of payments made after due renders it inadvisable to make a more definite statement regarding the effect of the strike.

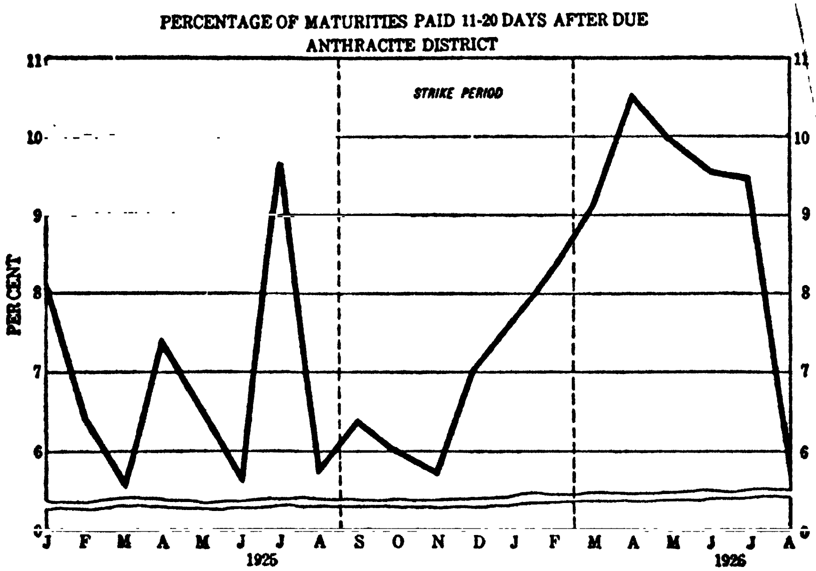

CHART 22

3. Payments 21–30 Days After Due

The percentage of maturities paid from 21–30 days after due shows a distinct upward trend during the strike period. The trend is shown by Chart 23. It may be noted, however, that the increase actually began some time before the strike. One peculiar feature of the curve stands out prominently. Ordinarily, December is a month which shows a decided increase in the percentage of payments. In this group, on the contrary, it shows a considerable decline. It should also be noted that the peak came in February, rather than in March,

1926, as is common. It is, of course, impossible to say what portion of this increase was due to the strike, since the increase had its inception some months before the strike was called. That there is, nevertheless, some reflection of the strike in the percentage of maturities paid from 21–30 days after due can scarcely be questioned.

PERCENTAGE OF MATURITIES PAID 21-30 DAYS AFTER DUE
ANTHRACITE DISTRICT

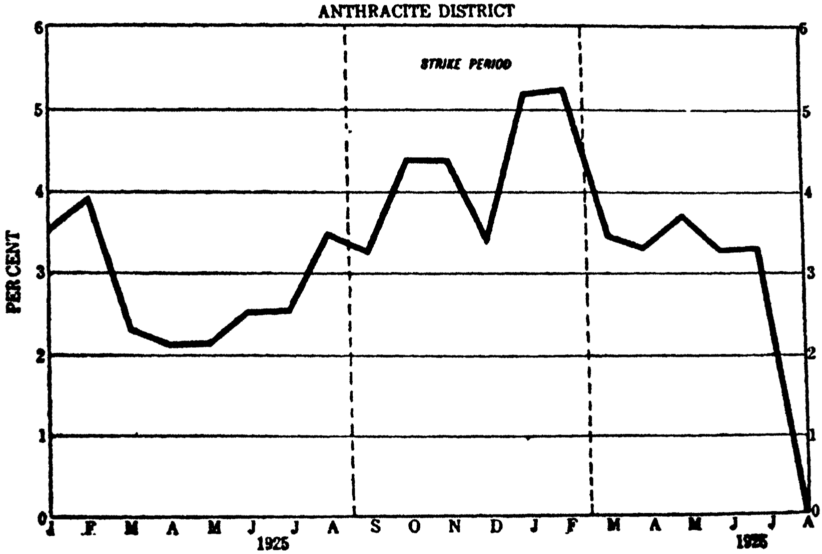

CHART 23

4. Payments 31–60 Days After Due

In the percentage of maturities paid between one and two months after due, the effect of the strike is shown with considerable clearness. From Chart 24, it may be noted that after the great drop in July, 1925, from the peak of the preceding month, there was an upward movement which did not reach its highest point until February, 1926. Thereafter, there was a steady decline for three months, and then the movement again turned upward.

It has been mentioned above that the data upon

which the study of the anthracite area is based do not cover a sufficiently long period to eliminate the seasonal fluctuations. Merely from observation, however, it appears that June–July is a period when the percentage of delinquencies is likely to be high. Or, to look at it from the opposite point of view, it is a period when delinquencies reach a peak and, accordingly, the percentage of total maturities past due which is paid is increased. It seems probable that the great upward

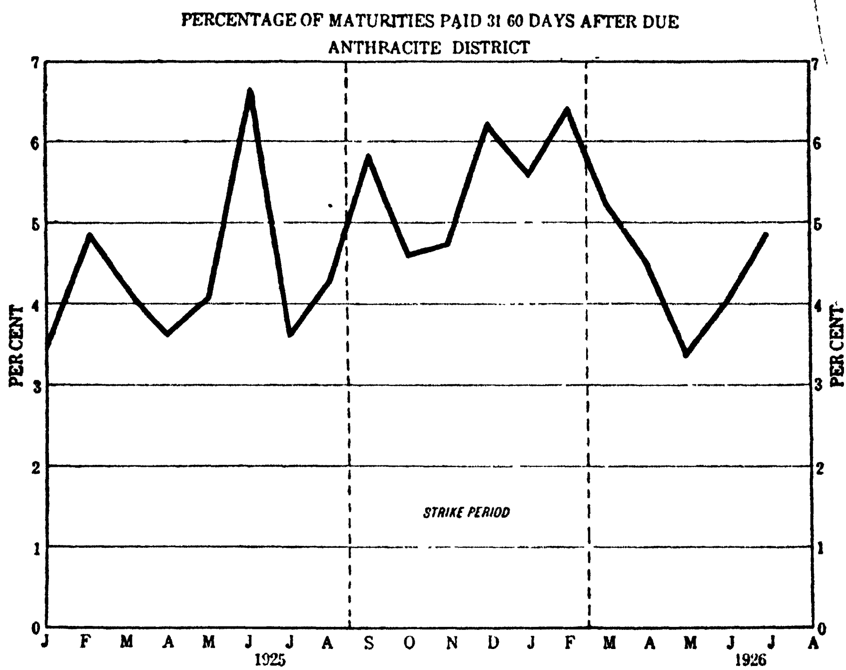

CHART 24

movement for June shown on Chart 24 above is due to a seasonal fluctuation and that the strike caused an increase of about two per cent in the payments 31–60 days past due.

5. Payments 61–90 Days After Due

It would be difficult to obtain a curve which more plainly reveals the effect of the strike than the one for

the percentage of maturities paid from two to three months after due, as shown by Chart 25. Preceding the strike, in 1925, there was a zigzag downward trend. Beginning in August, 1925, however, the percentage began to increase and continued its advance, without more than halting, until March, 1926. Thereafter, there was a sudden drop, almost to the level preceding the strike.

Naturally, the percentage of total maturities which is paid from 61–90 days after due is small. The per-

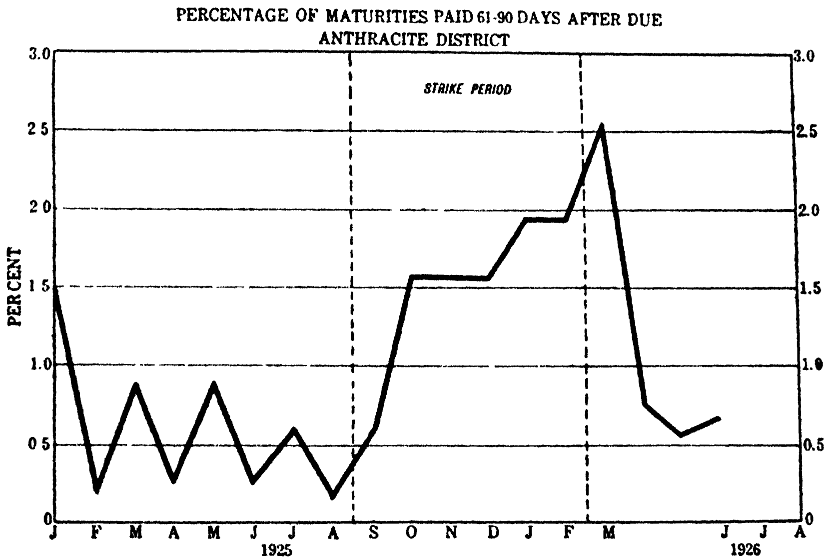

CHART 25

centage increase, therefore, which accompanied the strike is slight, or, on the average, from about one-half of one per cent to one and three-quarters per cent.

6. Payments Over 90 Days After Due

The accounts which run over three months past due should be exceedingly rare. Under normal conditions, the car would be repossessed, if possible, before such a long period of delinquency. In unusual periods, on the other hand, it may appear more advisable to allow the

purchaser to keep the car in the expectation that he will, when better business conditions prevail, pay the remaining balance. The anthracite coal strike was an interesting example of a time when one of the major problems of finance companies was to keep the car sold,

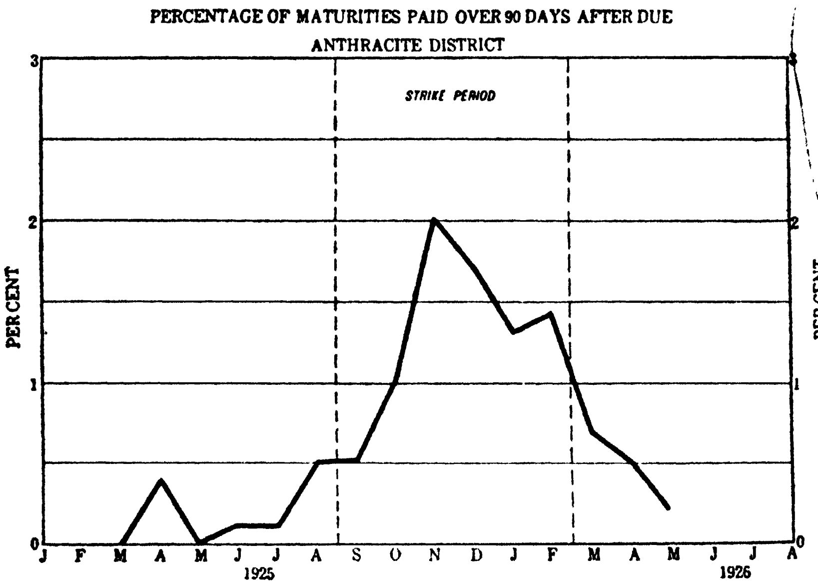

CHART 26

rather than to repossess it and to dispose of it without loss. The effect of this policy is shown by Chart 26.

For four of the eight months of 1925 preceding the strike there was no paper more than 90 days delinquent. The average for the period was fifteen-hundredths of one per cent of the total maturity. After the outbreak of the strike, there was a very rapid increase for two months; and thereafter, with one exception, a continuous decline. The average for the strike period was a little over nine-tenths of one per cent of the total maturities, or about six times as large as was the average in the earlier period.

7. Total Percentage of Maturities Delinquent Over 10 Days

The total percentage of maturities delinquent has been considered above, in the treatment of payments accord-

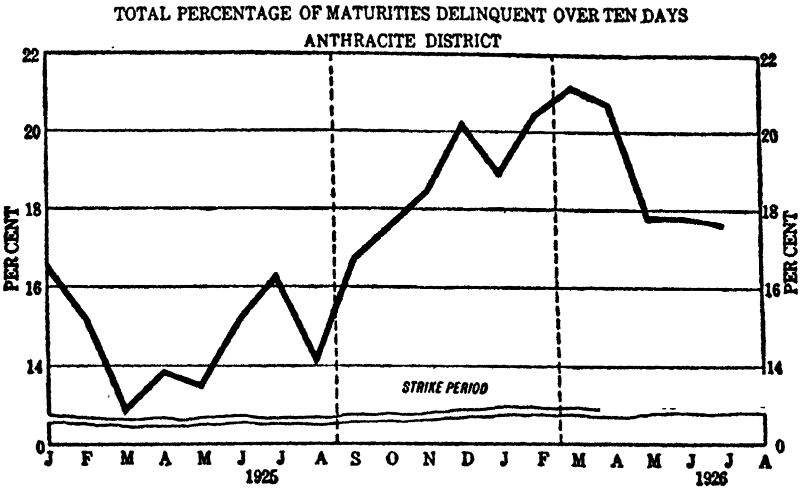

CHART 27

ing to calendar months. Chart 27 shows the percentage of maturities delinquent over 10 days. In general, the percentages are about the same as were given in connection with the earlier method of calculation.

Part Six

CONCLUSIONS

The analysis of the preceding pages may be summarized, according to the various categories into which the discussion has been divided, as follows:

1. Anticipations

During the strike, the percentage of total maturities in the anthracite area which were anticipated decreased, but not so rapidly as in the surrounding area. The average percentage for this period in the anthracite area was a little over ten and one-quarter, as contrasted with almost eleven and three-quarters for January to August, 1925. The rate of decline in the remainder of the Philadelphia territory, however, was so rapid that the difference between the two districts was increased by about three-quarters of one per cent. This caused a gain in the relative position of the anthracite area of about six per cent.

2. Payments in the Month Due

The curtailment of income concomitant with the strike was reflected in a smaller percentage of maturities paid in the month due. Previous to the strike, the

average amount paid in the calendar month in which the notes fell due was approximately seventy-three and one-half per cent. During the strike, the average was about sixty-nine per cent, or a drop of four and one-half per cent. The surrounding territory, however, also experienced a slowing-up of payments during this period, so that the average difference in the percentage paid in the month due in the two districts amounted to only a little over three and one-half per cent. Inasmuch as the percentage paid in the month due became almost constantly lower as the strike continued, one may say with considerable assurance that when the income of purchasers is adversely affected over a period of time, a cumulative decline in the payments on instalments may be expected.

3. Total Delinquencies by Calendar Months

Delinquencies in the anthracite region show a marked increase as a result of the strike. Previous to the strike in 1925, the average percentage of total maturities delinquent, as figured by calendar months in order to make them comparable with the G. M. A. C. reports, was a little less than fifteen. During the strike, the percentage increased to almost twenty and one half. This difference of five and one-half per cent, however, was offset to some extent by an increase which was registered in the remainder of the Philadelphia territory. Calculated on the basis of the differences between the two districts, the same tendency was present, but not so strongly. Before the strike in 1925, the delinquencies of the anthracite area averaged two and three-quarters per cent above those of the surrounding area, while during the strike the difference was increased to over five and one-half per cent. It is beyond question, accordingly, that a curtailment of income such as accompanied the anthracite strike will increase the percentage of maturities which run past due. In the

curtailment under consideration, the amount increased by approximately three per cent of total maturities.

4. Payments in Calendar Month Following Maturity

Calculated by calendar months, the percentage of total maturities which ran past due but were paid within thirty days did not increase materially. The average for 1925 before the strike in the anthracite area was twelve and one-half per cent, and during the strike rose to fifteen per cent. The increase was to some extent offset by a rise in the surrounding territory, so that during the strike the difference between the anthracite area and the remainder of the Philadelphia district increased a tenth of one per cent. In conclusion, therefore, it may be said that a curtailment of income does not materially increase the percentage of past-due maturities paid in less than one month.

5. Payments in the Second Month Following Maturity

A direct effect of the strike is evident in the percentage of total maturities paid in the second calendar month following maturity. The average in 1925 before the strike in the anthracite area was less than one and one-half per cent. This increased to two and one-half per cent during the strike—a net gain, since the percentage in the surrounding area did not advance. While the percentage is small, it represents almost a doubling of the percentage of maturities paid for this group.

6. Payments in the Third Month Following Maturity

The effect of the strike on delinquencies of 60–90 days is even more marked than that noted for those paid in the second month following maturity. During the

strike, the percentage of total maturities paid between two and three months after due increased from the preceding average of less than one-half of one per cent to one per cent. The percentage of this type of payment in the surrounding area, however, declined, so that the increase in the anthracite area was over twice its preceding level.

7. Maturities Delinquent and Paid 1–20 Days After Due

The average percentage of maturities which became delinquent and were paid 11–20 days after due was the same in the strike period as in 1925 preceding the strike.

8. Maturities Delinquent and Paid 21–30 Days After Due

Delinquencies of more than 20 days can not be ascribed to negligence on the part of the purchasers or to the routine mechanism of the finance company. The average percentage of those paid 21–30 days after maturity in the anthracite area previous to the strike was two and three-quarters. During the strike, this increased to almost four and one-quarter—an increase of slightly over fifty per cent. A large portion of this increase may be ascribed to the strike.

9. Maturities Delinquent and Paid 31–60 Days After Due

The average percentage of maturities delinquent and paid 31–60 days after due in the anthracite area in 1925 previous to the strike was four and one-quarter. During the strike period, this increased about thirty per cent or to an average slightly in excess of five and a half. The fact that this increase was less than has just been noted in connection with the delinquencies of from 21–30 days

may be to some extent caused by increased pressure for payment before the second instalment becomes due.

10. Maturities Delinquent and Paid 61–90 Days After Due

The percentage of maturities which became delinquent and were paid 61–90 days after due in the anthracite area increased during the strike period approximately sixty-five per cent over the average for January to August, 1925. The percentage of total maturities involved is, of course, small. For the period preceding the strike, it averaged only six-tenths of one per cent and during the strike period just fell short of one per cent.

11. Maturities Delinquent and Paid Over 90 Days After Due

Maturities which became delinquent and were paid over 90 days after they were due show the greatest increase of any group under consideration. The average percentage of total maturities coming within this category before the strike was fifteen-hundredths of one per cent. During the strike, this increased to 0.92 per cent.

The above conclusions may be given in tabular form as follows:

TABLE XX

SUMMARY OF RESULTS

I. Distribution of Payments in the Anthracite Region

Payments	Average Percentage of Maturities in the Anthracite Region		Average Difference Between Anthracite Region and Surrounding Area		
	Jan.–Aug., 1925	Strike Period	Jan.–Aug., 1925	Strike Period	Net Change*
Anticipated	11.71%	10.33%	+0.09%	+0.84%	+6.41%
Paid in month due	73.59%	69.20%	−2.85%	−6.48%	−4.95%
Delinquent	14.70%	20.47%	+2.75%	+5.64%	+18.98%

II. Payments in Calendar Months Following Maturity

Payments	Average Percentage of Maturities in the Anthracite Region		Average Difference Between Anthracite Region and Surrounding Area		
	Jan.–Aug., 1925	Strike Period	Jan.–Aug., 1925	Strike Period	Net Change*
First calendar month after due	12.52%	15.06%	+1.79%	+1.86%	+3 91%
Second calendar month after due	1.34%	2.48%	+0.46%	+0.54%	+17.39%
Third calendar month after due	0.43%	0.99%	+0.23%	+0.74+	+221.74%

* The change in the average position of the anthracite region as compared with the remainder of the Philadelphia branch territory before and during the strike.

III. Maturities Delinquent and Paid by Groups in Anthracite Area

Days After Due	Average Percentage		Net Change*
	Jan.–Aug., 1925	Strike Period	
11–20	6.91%	6.89%	−0.03%
21–30	2.78%	4.22%	+51.80%
31–60	4.29%	5.57%	+29.83%
61–90	0.60%	0.98%	+60.33%
Over 90	0.15%	0.92%	+513.33%

* The change in the average position of the anthracite region as compared with the remainder of the Philadelphia branch territory before and during the strike.

12. SUMMARY

Very briefly stated, the effects of the anthracite coal strike on payments made by the purchasers of automobiles financed by the General Motors Acceptance Corporation were as follows:

1. Anticipations increased relatively about six per cent.
2. Payments in the month due declined by about five per cent.
3. Delinquencies (calculated by calendar months) increased about twenty per cent.
4. Payments in the month following maturity showed no appreciable change.
5. Payments in the second month following maturity practically doubled.
6. Payments in the third month following maturity increased about one and one-half times.
7. The proportion of total maturities paid 11 to 20 days after due showed no change over the preceding period.
8. The proportion of total maturities paid 21 to 30 days after due increased a little more than fifty per cent over the preceding period.

9. The proportion of total maturities paid 31 to 60 days after due increased about thirty per cent over the preceding period.
10. The proportion of maturities paid 61 to 90 days after due increased about sixty per cent over the preceding period.
11. The proportion of maturities paid over 90 days after due, which includes those charged off as losses, increased approximately five hundred per cent over the preceding period.

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